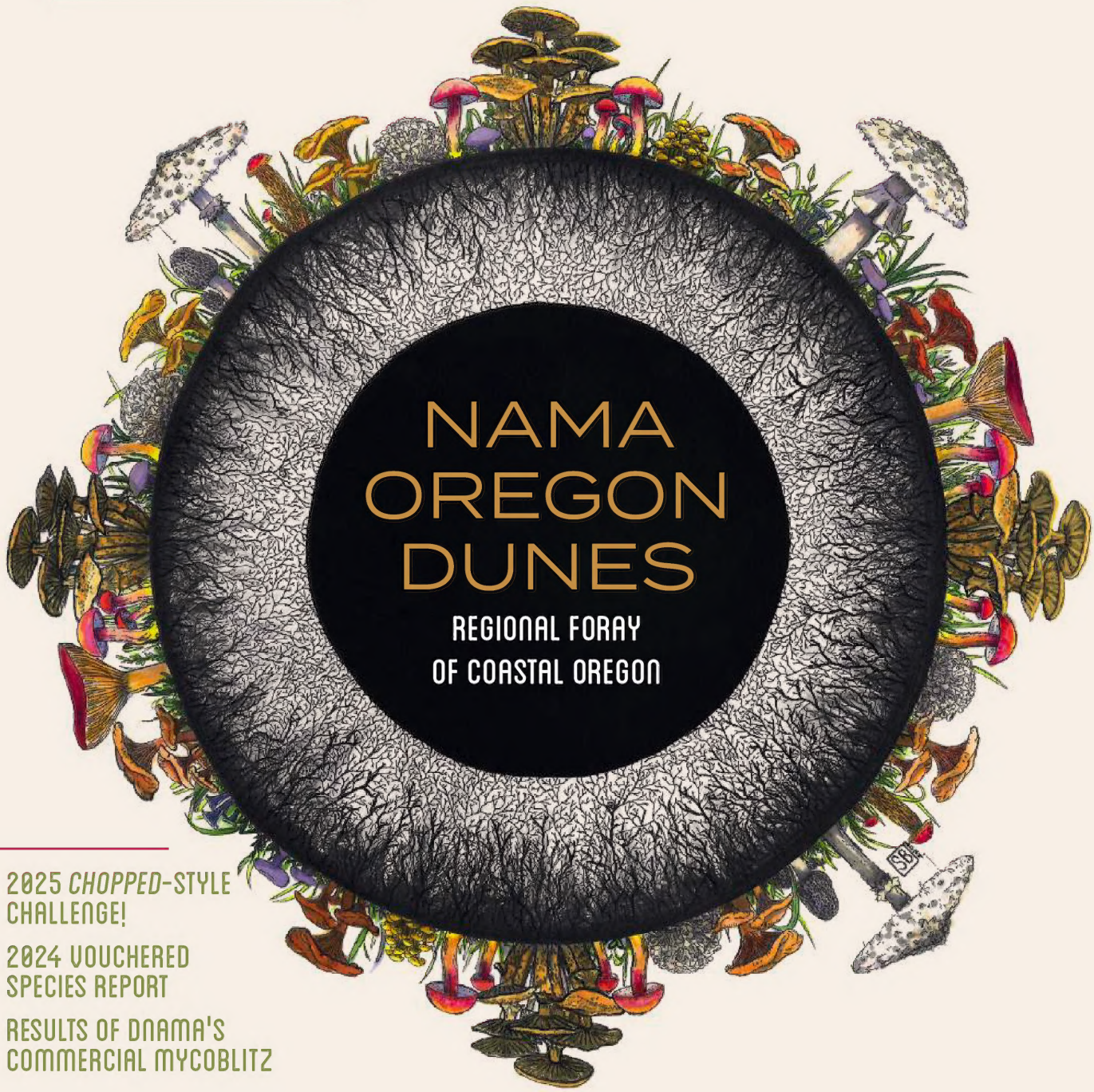
A PUBLICATION OF THE NORTH AMERICAN MYCOLOGICAL ASSOCIATION

The Mycophile Quarterly

JANUARY FEBRUARY MARCH 2025



NAMA OREGON DUNES

REGIONAL FORAY OF COASTAL OREGON

2025 *CHOPPED*-STYLE CHALLENGE!

2024 VOUCHERED SPECIES REPORT

RESULTS OF DNAMA'S COMMERCIAL MYCOBLITZ

A PUBLICATION OF THE NORTH AMERICAN MYCOLOGICAL ASSOCIATION

The Mycophile Quarterly

JANUARY FEBRUARY MARCH 2025

Toadstool Picker's Review 4
NAMA President Trent Blizzard

NAMA News

Instagratitude! 6
Kathy Yerich, Marketing Committee Chair

Congratulations to 2024 Knighton and Lincoff Awardees! 7
Philip A. Carpenter, Awards Committee Chair

Call for Nominations: 2025 Lincoff and Knighton Awards 11
Philip A. Carpenter, Awards Committee Chair

Dr. James C. Curry Foray Travel Scholarship Funds Still Available 13
NAMA President Trent Blizzard

NAMA Forays

Announcing NAMA Oregon Dunes: Regional Foray of Coastal Oregon! 14
Kristen Blizzard, Website Committee Chair

NAMA New England Chief Mycologist Renee Lebeuf 17
Ken Buegeleisen, Foray Committee Chair, Bruch Reed, COO/*MQ* Ed

2025 Annual Foray Logo Contest Kickoff 18
Rose Tursi, Outgoing Visual Arts Committee Chair

NAMA_MX25: Journey to Ixtlan - Tickets Almost Gone! ..21
Bruch Reed, COO/MQ Ed.

Affiliated Club Spotlight 22

Club Profile: Coastal Shores and Spores Mycological Society 22
Luke Smithson, Membership Manager, Club Relations Committee Chair

Marek Turowski Memorial Scholarship Recipient's Perspective on Pacific Northwest NAMA Camp 24
Ross Hauberg

Mycophilia

2024 Pacific Northwest NAMA Camp Vouchered Species Report 26
Oliver Filialuna, Dr. Andrew Wilson, Voucher Collection Project Committee Chair

Why *Agaricus julius* is the Ideal Choice for Colorado's State Mushroom 33
Joint Committee to Establish a State Mushroom for Colorado

Rare, Precious, Beautiful and Delicious (*A Hymn to the Emperor Mushroom*) 38
Hamilton Pevec, President, Western Colorado Mycological Association

Results of DNAMA's 2024 Commercial MycoBlitz 40
DNAMA Committee, Joshua Birkebak, Chair

Medicinal Mushrooms: Where We Were, Where We Need to Be and How to Get There in 2025 45
Dr. David Walde MD, FRCPC, OOnt, Medicinal Mushrooms Committee

NAMA Eats

Culinary Arts Committee's 2025 *Chopped*-style Challenge! 55
Julie Schreiber, Culinary Arts Committee Chair

NAMA Reads

The Mushroom Color Atlas: A Guide to Dyes and Pigments Made from Fungi by Julie Beeler 58
Book Review by Rose Tursi, Outgoing Visual Arts Committee Chair

NAMA Crossword

NAMA Crossword 62
Bruch Reed, COO/*MQ* Ed., with Layout Artist Chris Ross

Answer Key to October November December 2024 NAMA Crossword 63

A PUBLICATION OF THE NORTH AMERICAN MYCOLOGICAL ASSOCIATION

The Mycophile Quarterly

JANUARY FEBRUARY MARCH 2025

Staff

EDITOR-IN-CHIEF ..... Bruch Reed
GRAPHIC DESIGN AND LAYOUT ..... Cross Creative
COPY EDITOR ..... Bruch Reed
PRESIDENT ..... Trent Blizzard
PAST PRESIDENT ..... Barbara Ching, PhD
CHIEF OPERATING OFFICER ..... Bruch Reed
FIRST VICE PRESIDENT ..... Dave Layton
SECOND VICE PRESIDENT ..... Robert Courteau
SECRETARY ..... Susan Kayser
TREASURER ..... Melodie Gates
MEMBERSHIP MANAGER ..... Luke Smithson
AT-LARGE TRUSTEE ..... Cheshire Mayrsohn
AT-LARGE TRUSTEE ..... Alisha Millican
AT-LARGE TRUSTEE ..... Elinoar Shavit

Committee Chairs

AWARDS ..... Philip A. Carpenter
CULINARY ARTS ..... Julie Schreiber
CULTIVATION ..... Tavis Lynch
EDUCATION ..... Sr. Marie Kopin, Eva Gordon
FINANCE ..... Melodie Gates
FORAY ..... Ken Buegeleisen
FUNDRAISING ..... Vacant
MARKETING ..... Kathy Yerich
MEDICINAL MUSHROOMS ..... John Michelotti
TOXICOLOGY ..... Heather Hallen-Adams, PhD
VISUAL ARTS ..... Rose Tursi
VOUCHER COLLECTION PROJECT ..... Andrew Wilson, PhD
WEBSITE ..... Kristen Blizzard
CONSERVATION & STEWARDSHIP ..... Aaron Tupac
CLUB RELATIONS ..... Luke Smithson
DNAMA: DNA COMMITTEE ..... Joshua Birkeback

Cover

Connected
Sarah Basso

Become a member of NAMA
Visit www.namyco.org or email Luke Smithson
membershipmanager@namyco.org

All statements and opinions expressed in this newsletter belong solely to the individual author and in no way represent or reflect the opinions or policies of the North American Mycological Association. To receive this publication electronically, please contact Bruch Reed, Chief Operating Officer and *Mycophile Quarterly* Editor: mycophile@namyco.org.

Archive Copies
of the newsletter are available in the Publications section of the NAMA website, www.namyco.org

Content
Please contact Mycophile@namyco.org with your article proposals and ideas. We'll get you published!

Submissions
Submissions must be received in editable-document format (do not send pdfs), with photos attached separately (not embedded) and photo credits provided.

NAMA Toadstool Picker's Review

Happy Spring!

NAMA President Trent Blizzard and Web Admin Kristen Blizzard

Kristen and I are very excited to organize NAMA Oregon Dunes: Regional Foray of Coastal Oregon we are announcing in this *Mycophile Quarterly.* We hatched the plan for this foray, did the legwork to find a great venue and will be the official planners. The dunes in coastal Oregon are awesome and home to our abundant local matsutake, which is fun to find and delicious to eat. In addition, this area is stunningly beautiful, wet and peaking with mushrooms at the end of October. Kristen and I have been living out here during the fall and winter for a few years and recently made it our full-time abode. The mushrooms made us do it! We are lining up great chefs to make the culinary aspects of this event shine. Make sure you pay attention to announcements and sign up early as this event is sure to sell out!

While we were able to sneak down into California a bit in January, we spent most of our winter building our annual morel-foraging maps at GeoForager. This year, our big task was to make an App for Android and iOS. Next on our list is to chase morels and spring porcini all over the west in April, May and June. We hope to range from Mt. Shasta up to Mt. Adams and west into Idaho, maybe as far as Wyoming if the rains cooperate.

In terms of NAMA business, our Webinar schedule is winding down as the mushroom season picks up. I hope you got a chance to enjoy at least one of our educational Webinars this season. You can see recordings of all of them at https://namyco.org/events/webinars/. As a group, we are all working hard the next six months to deliver 3 big forays: NAMA_MX25, NAMA New England and NAMA Oregon Dunes. We are also preparing for our Annual Meeting of NAMA's Board of Trustees, set for April 9 at 7:00 PM, which is represented by one member from each of our 90 member clubs. This is the first time we will hold this meeting completely via Zoom, as we previously held it in person each year during the Annual Foray. Truthfully, it was difficult for so many members to skip parts of the event to attend a business meeting, so we decided to make the Annual Meeting something we could host via Zoom.

Looking forward to another great mushroom and mycological season!

Trent Blizzard

Trent Blizzard
President

MQ NAMA News

Learn about all the Happenings in and around NAMA.

Instagratitude!

KATHY YERICH, MARKETING COMMITTEE CHAIR

In North America's Midwest, we talk about the weather a LOT! What is the weather like in your neck of the woods right now? Is it the end of your mushroom season or the beginning? The great thing about tuning into the online mushroom community is that it is ALWAYS mushroom hunting season somewhere! Maybe you grow or study mushrooms no matter what the weather brings.

Thanks to the superb contributors listed below, we were able to get a peek into their worlds of hunting, growing, cooking, studying and celebrating mushrooms! This includes our talented Instagram Manager, @oliver.p.filialuna, diligently keeping you in the loop on NAMA events, including the monthly book club, Webinars and upcoming forays! Because of their dedication, our account has grown to more than 28,000 followers! If you haven't already, please check it out @northamericanmyco.

INSTAGRAM TAKEOVER ARTISTS

South Sound Mushroom Club	@southsoundmushrooms
Rachel Zoller	@yellowelanor
Chris Adams	@sporelust
Myco Geeky	@mycogeeky
Featuring	@mycotreks
	@donthemushroomhunter
With photography by:	@rolling_lens_photography
Marija	@annamarijahelt
Aixa and Max	@myceliumatters
Desert Alchemist	@desert_alchemist
Cosa Buena	@cosa.buena
Mycolove Farm	@mycolovefarm
Featuring	@ensofarmandforage
Central Texas Mycological Society	@centraltexasmycology

Not an Instagram user? You can catch the same content on the NAMA Facebook page. We encourage you to follow AND contribute to the NAMA Facebook Group. We look forward to seeing YOUR mushroom related content there!

Congratulations to 2024 Knighton and Lincoff, and President's Awardees!

PHILIP A. CARPENTER, AWARDS COMMITTEE CHAIR

CLAUDETTE LAMPRECHT

Harry and Elsie Knighton Service Award

photo: Renee Brown

Congratulations to Claudette Lamprecht, recipient of the 2024 Harry and Elsie Knighton Service Award, presented at Pacific Northwest NAMA Camp preceding the Saturday-evening keynote. Following is the grateful nomination letter submitted by Minnesota Mycological Society President Peter Martignacco and Vice President Heather Erickson.

"There is no one more deserving of recognition and consideration for the Harry and Elsie Knighton Award than Claudette Lamprecht of the Minnesota Mycological Society. Claudette has become one of the most impactful members and leaders of the Minnesota Mycological Society, one of the largest in the United States.

"Claudette's love for mycology began nearly 70 years ago, when she was three years old. She would accompany her mother and grandmother on foraging trips into the woods of northeast Iowa. In the spring, they would hunt for morels and around Labor Day they would hunt for "fall buttons." Just a few years later, as her skills improved, she would pay for her parochial school books by selling those foraged delights to the good folks in the Decorah area.

"During her college years, Claudette met a mycophobic but pliable young man who had a fascination with nature. His name was John Lamprecht. Claudette's skills as a teacher and mentor would be put to the test, teaching this neophyte

photo: John Lamprecht

the joys of foraging and what wonders the fungal kingdom held. The rest is history. She married him and eventually, in 2006, she convinced him they should join the local mushroom club.

"The Minnesota Mycological Society has been around since 1899 and has a healthy membership of 200 or so. From the start, Claudette volunteered wherever there was a need. The treasurer and membership coordinator were moving away. So, in spite of a hatred of mathematics and limited computer skills, she jumped at the chance to help out. It soon became obvious her organizational skills and sense of fiscal responsibility were going to bear dividends and help grow the limited resources of the society.

"As the public began to discover that there were treasures in the woods, our membership grew. With that growth came some challenges. Claudette has a relentless drive to support learning opportunities for members and the general public. Through planning and direct involvement, Claudette has helped us address the challenges of growing the current membership count of more than 1,200 members.

"It's a challenge to make personal connections with so many new people but Claudette does it with great enthusiasm and joy. She is adept at welcoming new members and making everyone feel valued. In that same spirit, she has championed efforts at volunteer appreciation and continues to ensure we honor those who make our society work.

"She finally retired from her position as club treasurer after 15 years, leaving the MMS in a strong financial position, but she has by no means settled into her rocking chair. During her entire time with the MMS, Claudette has remained a cornerstone of nearly everything we do. She was instrumental in instituting graduate scholarships and remains active in the selection and award process. She

has helped expand and personally leads many forays. She plans and staffs our annual Family Fungal events, assists with and helps get staffing for our yearly State Fair display and other public outreach efforts, teaches classes, does presentations, and plans and assists with social events. She relishes the role of mentoring others to have deeper involvement in activities and is so genuine and welcoming that she is hard to say no to.

"In 2014, Claudette was selected to receive the MMS' highest honor, The Golden Chanterelle Award. This award can only be won once, but her incredible contributions to everything we do would warrant her nomination year after year. Without her unwavering and steadfast contributions of time and energy, the Minnesota Mycological Society would not be the same successful organization that it is today. For these and countless other reasons, we submit Claudette Lamprecht for nomination to receive the Harry and Elsie Knighton Award."

DAVID ARORA

Gary Lincoff Award for Contributions to Amateur Mycology

photo: David Arora

David Arora received the 2024 Gary Lincoff Award for Contributions to Amateur Mycology, with a nomination letter written by distinguished Pacific Northwest NAMA Camp Chief Mycologist Noah Siegel.

"David Arora's impact on the mycological community has been profound and enduring. From his early forays into self-taught mushroom knowledge in California to the publication of his landmark field guides, he has consistently advocated for the everyday enthusiast and forager. His dedication to demystifying the sometimes-complex world of fungi has opened the field to countless individuals. Additionally, his dedication to the inclusion and acceptance of different cultures into the mushroom world is admirable.

"David Arora's expertise, particularly in West Coast mushrooms, is remarkable. He played a vital role in establishing the Fungus Federation of Santa Cruz*, providing a vibrant community for those eager to learn. His field guides,* Mushrooms Demystified *and* All That the Rain Promises and More *are essential for foragers, combining thoroughness, accessibility and his characteristic touch of humor. These books have withstood the test of time and are widely regarded as the best mushrooms books ever written.*

"David Arora's groundbreaking contributions to amateur mycology have spanned decades. It's with deep respect that I believe it's well past time his invaluable impact is recognized with this award."

PEGGY GREEN

President's Outstanding Service Award

Peggy Green poses with her award.

NAMA President Don Huffman (1989 to 1984) instituted the President's Outstanding Service Award to honor persons who have been of outstanding service to NAMA. This award represents the current NAMA president's personal selection.

NAMA President Trent Blizzard presented Peggy Green, Foray Registrar, with this award on Saturday evening of Pacific Northwest NAMA Camp. His grateful remarks thanked her for her faithful, energetic service not only in her Foray Registrar capacity, which she has now fulfilled admirably through 4 NAMA events, including MO-NAMA 22 (assisting past Foray Registrar Connie Durnan); Appalachia NAMA 2023; Pacific Northwest NAMA Camp and NAMAZona: Regional Foray in Arizona; as well as the upcoming NAMA New England and NAMA Oregon Dunes: Regional Foray of Coastal Oregon.

President Blizzard noted Green's skill in organizing, planning and communicating with NAMA event attendees, all performed with tireless dedication and a sense of fun. Green, who since Pacific Northwest NAMA Camp has been elected president of her home club Missouri Mycological Society (MOMS), with hallmark humility expressed gratitude in return for the honor.

Call for Nominations: 2025 Lincoff and Knighton Awards

PHILIP A. CARPENTER, AWARDS COMMITTEE CHAIR

Nominations for the following NAMA awards will be accepted through June 1, 2025. Please send a single copy of the nomination via mail or email to Awards Committee Chair Philip A. Carpenter at aptosphil@gmail.com (those who wish to send by mail, please email to obtain mailing address).

Gary Lincoff

Gary Lincoff Award for Contributions to Amateur Mycology

This award is given annually to recognize a person who has contributed extraordinarily to the advancement of amateur mycology. Its recipients have often extensively conducted workshops, led forays, written or lectured widely about mushrooms and identifying mushrooms, all on a North American continental level. In 2015, the name of the award was officially changed to recognize the tremendous contributions of the late great Gary Lincoff.

Nominations for this award should include a description of the contributions the nominee has made to the field of amateur mycology. Please note that a name alone is not a sufficient nomination; neither is a profile on a website. The recipient must be living at the time of the award.

Nominees who were not selected to receive the award are automatically renominated for 4 additional years, after which the nominee's name must be resubmitted. It is up to the nominator to keep track of this and it is advised that a previous nominator submit additional information to update about a nominee's current, additional accomplishments.

Elsie Knighton and Harry Knighton

Selection among nominees is made through a vote of the most recent past award winners. The award includes a commemorative plaque and Lifetime Membership in NAMA.

The Harry and Elsie Knighton Service Award

The Harry and Elsie Knighton Service Award was established by the NAMA Board of Trustees to recognize and encourage individuals who have distinguished themselves in service to their local clubs. It is named for the Knightons, whose efforts began the North American Mycological Association in 1959.

The annual award consists of a commemorative plaque, publicity for the winner and their club in *The Mycophile Quarterly*, a one-year membership in the organization and registration, housing and foray fees for a NAMA Annual Foray (must be used within 3 years).

Each year's recipient is selected by a group of the most recent recipients of the award. Every NAMA-affiliated mushroom club may nominate one candidate whom it feels has performed meritorious service during the current or preceding year, which should be thoroughly described. Unselected nominees are automatically renominated for two additional years. Updated nominating information is encouraged for those previously nominated.

Dr. James C. Curry Foray Travel Scholarship Funds Still Available

NAMA PRESIDENT TRENT BLIZZARD

Funds are still available for Dr. James C. Curry Foray Travel Scholarship for the 2025/2026 Fiscal Year.

This scholarship is generously funded by Dr. James C. Curry, with a total $10,000 available! The goal of this scholarship is to help defray the cost of attending a foray, especially for youth attendees and attendees in need.

Dr. James C. Curry

- $9,000 of that will be given to NAMA's member clubs and associations to fund scholarships to their own local and regional forays.
- $1,000 of that will be used to subsidize travel to NAMA forays.

NAMA is charged with selecting 30 NAMA-affiliated clubs this fiscal year and providing them with $300 each. Each NAMA-affiliated club is authorized to administer the scholarship as they see fit but should award the scholarship within 12 months to help an attendee get to a mushroom foray. Funds may be used to send an attendee to any foray event, including but not limited to NAMA events.

All NAMA-affiliated mushroom clubs are eligible to apply! NAMA will award funds on a first-come, first-served basis until funds are exhausted; clubs that are not selected will automatically be eligible in the 2026/2027 fiscal year if the scholarship repeats.

The following NAMA-affiliated clubs have so far been awarded foray-travel funds: Alabama Mushroom Society; Alberta Mycological Society; Blue Ridge Mycological Society; Illinois Mycological Association; Mid Hudson Mycological Association; Minnesota Mycological Society; Missouri Mycological Society; Mushroom Club of Georgia; Mycological Society of Toronto; New Jersey Mycological Association; New York Mycological Society; Rhode Island Mycological Society; South Sound Mushroom Club; Western Colorado Mycological Association; Wisconsin Mycological Society; Yakima Valley Mushroom Society

NAMA Forays

Embark on an Immersive Experience with NAMA Forays.

Save the date for NAMA Oregon Dunes: Regional Foray of Coastal Oregon

Florence, Oregon, Oct. 30 to Nov. 2, 2025

KRISTEN BLIZZARD, WEBSITE COMMITTEE CHAIR

Lush coastal forest. (photo: Kristen Blizzard)

Event Organizers Kristen and Trent Blizzard know you will be absolutely floored by the unique mycology of lushly vegetated coastal Oregon. This incredible area is special in that two distinct climate zones are found within close proximity to one another as dunes and coastal rainforest come together to create a prolifically fungal wild edible landscape unlike anywhere else.

Hunting matsutake amid the dunes.

The Oregon Dunes generally occur along the western side of Highway 101 and host large areas of coastal shore pines (*Pinus contorta*). It's in these pines that we find the magical and mysterious matsutake (*Tricholoma murrillianum*). With enough rain

Blizzards' basketful of matsutake (*Tricholoma murrillianum*). (photo: Kristen Blizzard)

and cooler temperatures, these highly coveted choice edibles are plentiful mid-October through mid-December. The dunes are also home to a fall flush of *Boletus edulis*, which are usually just starting to slow down by the time matsutake enter the scene. You will find plenty of other mushrooms in the region, including many that will excite mushroom dyers, such as *Cortinarius smithii* and *Hydnellum* species.

Best Western Pier Point Inn.

The coastal rainforest east of the 101 is covered in lush greenery, with huge first- and second-growth spruce, Douglas fir, cedar and hemlock, massive ferns and thickly mossed understory. This zone is home to a host of delicious edible mushrooms that appreciate these moist environs and the PNW fog: golden chanterelles, yellowfoot, *Sparassis*, lobsters, porcini, hedgehogs and more.

In similar fashion to our 2024 NAMAZona Regional Foray, at this event we will be leaning into the culinary aspects of wild mushrooms—especially matsutake! Weather permitting, forays will endeavor to include field tastings, while two sumptuous chef-prepared dinners provide evening highlights.

Registration will be capped at 100 attendees and is coming soon!

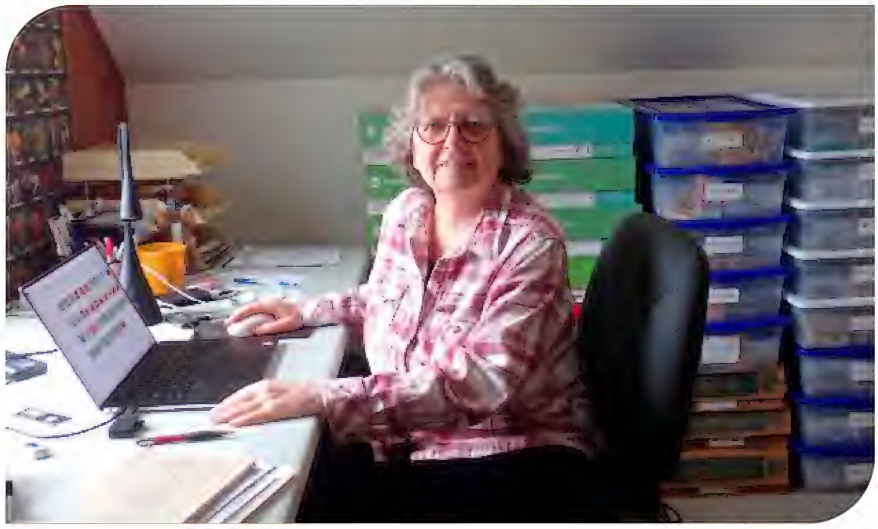
All attendees will stay at the comfortable, conveniently located Best Western Pier Point Inn, which will serve as event headquarters. No foray location is further than 30 minutes' drive from the hotel, with most being only 15 minutes away! Closest airports are Eugene (EUG), 1 hour 15 minutes; and Portland International (PDX), 3 hours 15 minutes.

Oregon coastal giant salamander (*Dicamptodon tenebrosus*) browsing among abundant yellowfoot (*Craterellus tubaeformis*).

Check this location off your bucket list—we can't wait to show you around!

Announcing NAMA New England Chief Mycologist Renee Lebeuf

KEN BUEGELEISEN, FORAY COMMITTEE CHAIR, BRUCH REED, COO*IMQ* ED



It is with great pleasure that we announce the engagement of Renee Lebeuf as Chief Mycologist for NAMA's 65th Annual Foray, to be called "NAMA New England."

Lebeuf has always been interested in nature; for awhile, she looked into plants and birds but when she entered the realm of fungi in 1999, she became instantly hooked. Stimulating her interest further was the encounter, at her first mushroom walk, of her partner, who had been studying fungi for a few decades and taught her all he knew. From then on, their whole life together was centered around fungi.

Having a scientific background first as a medical technologist and later as a scientific translator certainly helped her to gain knowledge and skills in mycology. After a few years of learning the mushrooms growing in her area, she took the next step in starting photography and creating her own fungarium, now comprising almost 5,000 collections.

With these new tools in hand, she decided to specialize first in waxycaps and then in *Mycena* and *Lepiota*, which helped her deepen her microscopic skills and work with monographs. Her new skills led directly to collaborations in publications with professional mycologists who mentored her further in the tricks of the mycology trade.

After her retirement in 2018, she decided to devote all her time to fungal taxonomy and likes to think of that new period as her third career. Since 2015

she has described, often as first author, more than 50 new species of fungi in genera *Cortinarius*, *Tricholoma*, *Cuphophyllus*, *Hygrophorus*, *Albomagister*, *Macrolepiota*, *Pluteus*, *Amanita* and a few others, and has coauthored more than 35 scientific papers.

NAMA New England will be an opportunity for her to meet or reunite with fellow mycologists from across the continent and see fungi that she has never observed before. Her planned keynote presentation will focus on her experience describing novel taxa in hopes of stimulating others to pursue that vital work, which is so important from a conservation point of view. As she enthuses, "There is so much fascinating and rewarding work that remains to be done in mycology, and that's what makes that science so interesting!"

2025 Annual Foray Logo Contest Kickoff

ROSE TURSI, OUTGOING VISUAL ARTS COMMITTEE CHAIR

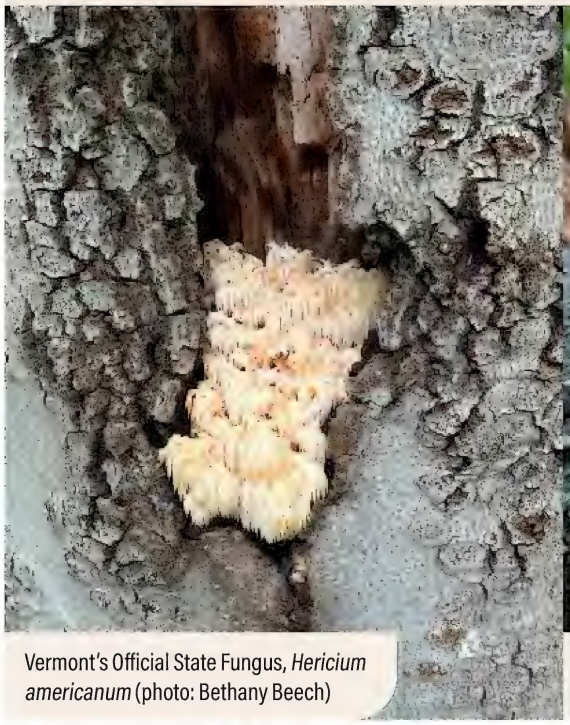
Recent Annual Foray logos, left to right: 2021, Kristen Blizzard and Chris Ross; 2022, Claudia Joyce and Francoise Chabot Lennon; 2023: Tiffa Theden; 2024, Tim Ballard

The 65th North American Mycological Association Annual Foray, to be called NAMA New England, will convene September 11 to 14 at Potash Hill near Marlboro, Vermont. Attention artists everywhere: we would love your help in creating a beautiful event logo! You can find the Application Form on the NAMA website by clicking here: Application Form.

2025 Annual Foray Logo Contest Rules:

1. This logo contest is open to anyone in the world! You do not have to be a NAMA member to enter.
2. Entries should contain the formal name of the event, which is NAMA New England.
3. Entries may contain the NAMA organization logo but this is not required.
4. Each contestant may submit up to 5 entries.
5. Submitted artwork must meet certain requirements for printing; please see guidelines below.
6. We prefer distinctly recognizable, real mushroom species known to occur in the area of the event. Special consideration will be given to entries that incorporate the State Mushroom of Vermont, *Hericium americanum*, aka "Bear's-head tooth."

Official NAMA logo.



Vermont's Official State Fungus, *Hericium americanum* (photo: Bethany Beech)

Hericium americanum (photo: Bethany Beech)

Submission Date:

1. Submissions must be received no later than May 15, 2025. The winning entry will be announced no later than June 15, 2025.
2. Submissions should be sent to: visualarts@namyco.org

Prizes:

The artist behind the winning design will receive the following:

1. A one-year membership to NAMA or a one-year extension if they are already a member.
2. A feature in NAMA's quarterly publication, the *Mycophile Quarterly*.
3. A copy of each item printed with the logo, expected to include a t-shirt, sticker and any other swag that is created for the event.
4. Should they choose to accept, the logo contest winner will also receive the Visual Arts Committee "full-ride" Scholarship to NAMA New England, valued at approximately $650 USD. This ticket includes a full 4-day pass to the event, including room and board, but not travel costs.This scholarship ticket is not transferable nor can it be exchanged for cash value. The recipient must be 18+ years in age to accept. As part of the Visual Arts Committee Scholarship, the recipient must agree to join the Visual Arts Committee for a minimum of one calendar year.

Requirements for Graphic Artwork:

1. Designs must be vector art that has been optimized for screen printing. This means that the design can not contain any gradient colors or gradient translucency. Solid colors only.
2. To keep within our printing budget, the design must be limited to 1 or 2 colors (or 3 colors by incorporating the color of the shirt into the design.)
3. Vector files such as AI or EPS are preferred.
4. Any fonts used must be free for commercial use.

Other Important Stuff:

The winning design will be selected by representatives from NAMA's Visual Arts, Foray and Marketing committees. They may, at their discretion, alter graphic elements, font or verbiage on the chosen design.

The winning entry becomes the intellectual property of NAMA for exclusive commercial use in marketing, merchandising and in any other way the organization sees fit.

NAMA_MX25: Journey to Ixtlan!

BRUCH REED, COO*IMQ* ED.

We are excited to report that, as of this writing, tickets for NAMA_MX25: Journey to Ixtlan are nearly sold out!

Attendees will thrill to the adventure of 7 nights in Oaxaca, curated by event organizers Zachary and Kimberly Hunter of The Fungivore, who provided us a thrilling preview of this event through their recent Webinar presentation "The Mushroom People of Oaxaca."

You will have unparalleled opportunities to foray among folks for whom mushrooms are central to their culinary, artistic and spiritual lives, while collecting specimens for NAMA's Voucher Collection Project, many of which may well be new to science! A rockstar roster of Mexican mycologists is involved in this ongoing endeavor to unite and expand North American mycology throughout our continent, including Ireri Montrer and Dr. Maru Hara.

If you are interested in this, please CLICK HERE for NAMA_MX25: Journey to Ixtlan event details!

Vamonos a Ixtlan!

NAMA Affiliated Club Spotlight

CSSMS members planning their forays (photo: Barbara McDowell)

Club Profile: Coastal Shores and Spores Mycological Society

LUKE SMITHSON, MEMBERSHIP MANAGER, CLUB RELATIONS COMMITTEE CHAIR

Imagine this: You start a new mushroom club and open your doors to the public in June. Less than four months later, you are hosting the Quinault Rainforest Mushroom Festival, a one-day festival with over 1,000 people attending from all over the states of Washington and Oregon, complete with a foray in the Olympia National Forest, vendors, talks and Langdon Cook (author of *The Mushroom Hunters*, *Fat of the Land* and other books) as your guest speaker.

Ganoderma applanatum artistry (art by Rose Tursi and Tara Gilliam)

This is how the Coastal Shores and Spores Mycological Society have introduced themselves to the mushroom community. Located in Ocean Shores, Washington, they began on Facebook to test the interest level of creating a mushroom club on this remote stretch of Washington coastline. They opened to the public with their first meeting in April, launched their website in June and officially joined the North American Mycological Association as a formally affiliated club in July 2024.

CSSMS President Corinne Srsen admiring some admirable boletes (photo: Rose Tursi)

NAMA Treasurer Melodie Gates and Trisha Swanson enjoy a naturalistic mushroom tableau (photo: Barbara McDowell)

Founded and led by Board Chair Corinne Srsen, Cochair Duncan Polk and Treasurer Bill Bullock, they now have 65 members and have held forays in partnership with the South Sound Mushroom Club and the Kitsap Peninsula Mycological Society. Located in an area with abundant edible mushrooms, they collect many choice mushrooms: chanterelles, lobster, porcini, candy cap and matsutake are among their members' favorites. Community science is also a focus, with recent workshops on both identification and iNaturalist. Connecting with the community has been a priority for the club. The parks department, schools and public library have all partnered with the club for various functions.

When asked about 2025 plans, the club looks to hire speakers, conduct a cultivation workshop, hold more forays with more community science and to host a springtime morel hunt/campout.

How have they accomplished so much in such a short time? They focused on finding partners and creating community, and also used a "just do it" attitude to get things done. Most importantly, they've made it their mission to "share the fun in fungi" and yes, that really is their mission statement!

Check them out at https://www.shoresandspores.com/ and save the date for the Quinault Rainforest Mushroom Festival, to be held on October 4th, 2025.

Marek Turowski Memorial Scholarship Recipient's Perspective on Pacific Northwest NAMA Camp

ROSS HAUBERG, MINNESOTA MYCOLOGICAL SOCIETY MAREK TUROWSKI MEMORIAL SCHOLARSHIP RECIPIENT

Finding *Tuber* species with Heather Dawson and Rye the Truffle Dog.

This past October, I had an unforgettable experience at the North American Mycological Association's Annual Foray, Pacific Northwest NAMA Camp, made possible by being awarded the Minnesota Mycological Society's (MMS) Marek Turowski Memorial Scholarship. Not only was this my first NAMA foray, it was also my first trip to the Pacific Northwest, making the entire experience extra special.

The mornings and afternoons were packed with captivating workshops and forays to mushroom-rich spots like campgrounds, trails and forest roads in the Gifford Pinchot National Forest. The scent of damp western red cedar hung in the air as we moved slowly among the towering trees, pausing often to marvel at the mushrooms poking up through the moss. Highlights included finding white

Carefully harvesting a *Russula*.

chanterelles, learning about truffles with Rye the Truffle Dog and discovering an array of common (yet new-to-me) PNW species like cat's tongue (*Pseudohydnum gelatinosum*) and the questionable *Stropharia* (*Stropharia ambigua*). I even found some coveted matsutake #1 buttons (*Tricholoma murrillianum*) to take home! Surrounded by such an abundance and diversity of mushrooms, the time for each foray flew by—but returning to camp and slipping into dry clothes was a welcome comfort after the day's wet adventures.

Typical lushly lichenized tree.

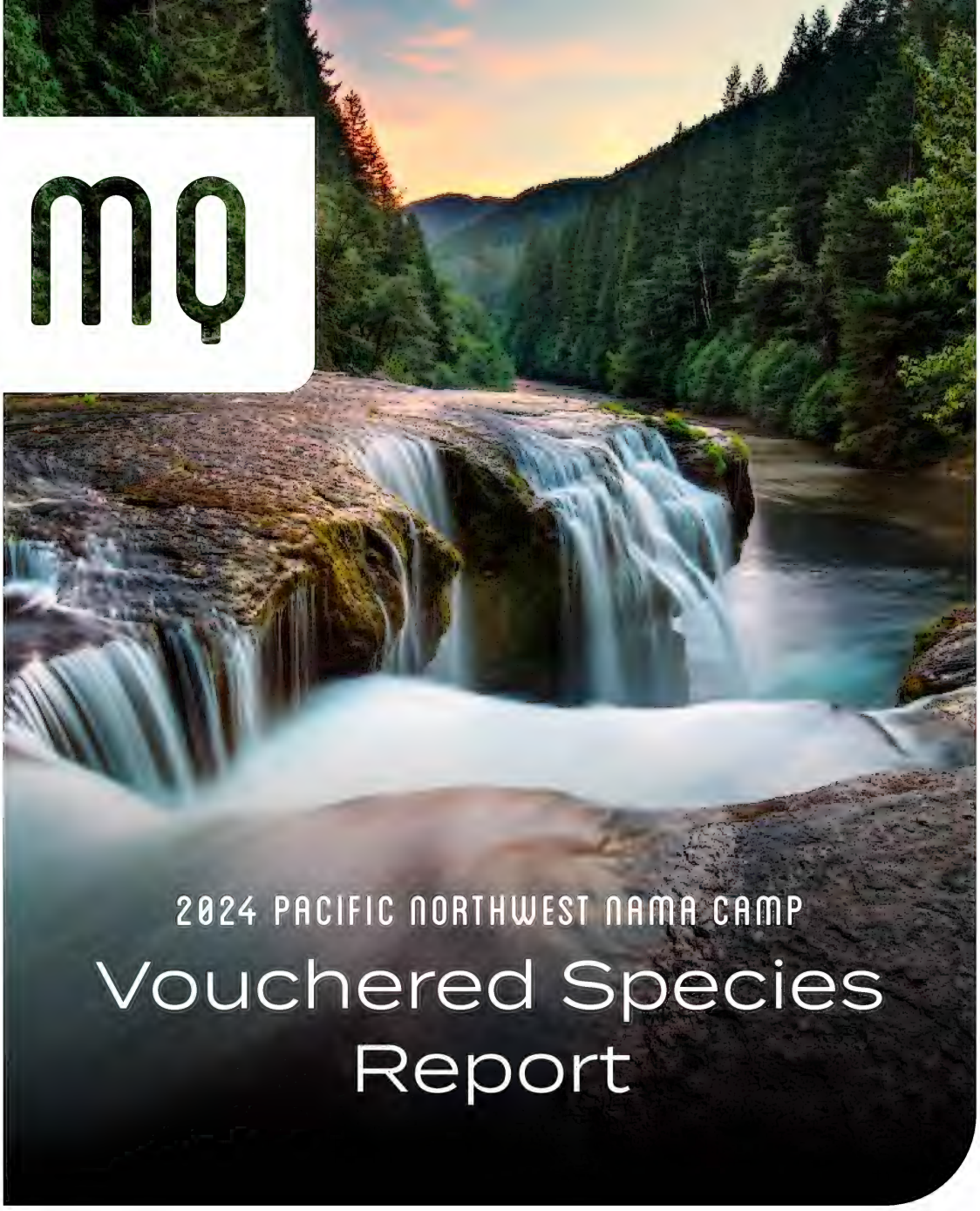
The evenings were equally enriching. Over dinner, I enjoyed meeting new friends, swapping stories about the day's discoveries and bonding over our shared passions. Later, keynote speakers gave fascinating talks on topics like fungal bioregions and exotic mushrooms from around the world.

Each night featured a mushroom-themed social event: a Halloween costume party, a culinary mushroom-tasting night and a mushroom-inspired happy hour, followed by a bonfire. Conversations flowed effortlessly among this diverse yet like-minded group, all brought together by a shared love of fungi and the outdoors. Hearing about people's unique backgrounds and niche interests was both inspiring and eye-opening, reinforcing that there's no "right" way to appreciate fungi. I met enthusiasts captivated by entomopathogenic fungi, admirers of tiny ascomycetes and determined foragers who had packed dehydrators and extra suitcases, ready for the mushroom hauls of a lifetime. Being part of this eclectic mix of mycological passions was a true privilege and made me realize just how limited my perception of fungi had been.

Marek Turowski Scholarship Recipient Ross Hauberg.

The connections I made during this short weekend will likely become lasting friendships and have already opened doors to exciting new opportunities. I left Pacific Northwest NAMA Camp feeling inspired, recharged and excited to continue exploring the world of fungi. Thanks to the scholarship I received, I was a part of something that felt not just like a foray but a celebration of community, discovery and fungi.

I'm already looking forward to the 2025 foray!



2024 PACIFIC NORTHWEST NAMA CAMP

Vouchered Species Report

OLIVER FILIALUNA,
DR. ANDREW WILSON,
VOUCHER COLLECTION
PROJECT COMMITTEE
CHAIR

Pacific Northwest NAMA Camp, the 2024 Annual Foray, was held October 31 to November 3 in Randle, Washington.

The event was organized by the NAMA Foray Committee and lead host club South Sound Mushroom Club as well as Southwest Washington Mycological Society, Kitsap Peninsula Mycological Society and Coastal Shores and Spores Mycological Society. Collecting sites included a variety of forested areas within and around Gifford Pinchot National Forest. Noah Siegel served as Chief Mycologist, Dr. Andrew Wilson was Voucher Coordinator and Harte Singer/ Joshua Birkebak and Stephen Russell led two separate DNA-sampling teams.

Many thanks to the Voucher Collection Project Committee (VCP) crew of Dr. Andrew Wilson, Chair; Adele Mehta, Foray Recorder; Collections Assistants Oliver Filialuna and Dr. Amy Honan (the latter of Crested Butte Botanical Garden); and Voucher Student Assistants Clairssa Arana, Megan Frisby, Carlyn Pudwill, Spencer Wimmer, Django Grootmyers (Graduate Student at University of Tennessee) and Connor Dooley (recent graduate of Oregon State University).

We thank the NAMA Board of Trustees for their continued support of the VCP program. The NAMA voucher specimens will be accessioned into the permanent herbarium collection at The Field Museum of Natural History (F) in Chicago, Illinois.

The 2024 Annual Foray Voucher List includes 460 specimens with 397 taxa (genus, species and varieties) represented. The specimens collected are composed of 45 ascomycetes, 413 basidiomycetes, 1 mucormycete and 1 myxomycete .

Sixteen persons made identifications, including Noah Siegel (identified a total of 194 vouchers); Shannon Adams (29); Josh Birkebak (27); Heather Dawson (25); Kendra Dedinsky (13); Connor Dooley (22); Oliver Filialuna (1); Django Grootmyers (95); Matthew Koons (4); Danny Miller (16); Bruch Reed (1); Alan Rockefeller (1); Rachel Swenie (7); Dr. Andrew Wilson (18); and Daniel Winkler (1).

125 persons made collections that became vouchers, listed alphabetically below with their number of vouchers. We would like especially to thank those who put their collections on iNaturalist for our team to find (bolded below).

Shannon Adams (26)
Chris Adams (3)
Jan Agosti (2)
Clarissa Arana (1)
Dani Arthur (1)
Brendan Baker (1)
Rachel Ballou (1)
Daniel Barizo (1)
Frank Bartucca (1)
Robyn Beck (4)
Josh Birkebak (14)
Kristen Blizzard (2)
Ariel Bonkoski (2)
Rachel Bouchillon (1)
Dawn Cameron (1)
Nancy Carey (1)
Philip A. Carpenter (4)
Julie Case (4)
Alice Chang (2)
Jeremy Collison (5)
Anna Conley (3)
Julie Conley (3)
Heather Dawson (24)
Kendra Dedinsky (13)
Ethan Disbrow (6)
Kayla Dixon (4)
Kurt Doctor (1)
Elizabeth Dods (1)
Emma Dombkowski (1)
Connor Dooley (3)
Maurisa Dorn (3)
Nora Dunkirk (5)
Oliver Filialuna (1)
Tina Mari Fox (10)
Lauren Francis (3)
Megan Frisby (3)
Diane Gamm (1)
Myco Geeky (1)
Grace Glaittli (1)
Ann Goddard (4)
Steven Gold (2)
Jim Gouin (1)
Django Grootmyers (15)
Jon Gunn (6)
Mike Haynes (4)
Janet Heppler (15)
Dr. Amy Honan (1)
Happi Hyphae (1)
Sego Jackson (1)
Laurie Jaegers (5)
Bruce Jensen (1)
Scott Johnson (9)
Allison Joyce (1)
Hilary Kaye (2)
Ben Kinsley (2)
Melissa Klotka (1)
Matthew Koons (6)
Brad Krieckhaus (2)
Krystal Kyer (1)
Kitty LaBounty (3)
Ashley Laman (1)
Sam Landes (3)
Aquila Lee (1)
Jonathan Lundy (2)
Dean Lundy (5)
Robin MacLean (1)
Luke Marks (1)
Lawrence Martin (4)
Kerri McCabe (11)
Alex Merryman (8)
Kristen Metcalfe (4)
Samantha Metcalfe (1)
Spike Mikulski (13)
Danny Miller (1)
Pat Mitchell (2)
Kate Mohatt (3)
Jenifer Monroe (2)
Charles Olsen (1)
Joann Olson (4)
Drew Parker (3)
Sandra Patton (4)
Tamra Prior (3)
Kristina Prosser (5)
Paul Przybylowicz (3)
Carlyn Elizabeth Pudwill(3)
Bruch Reed (1)
Leanne Stacy Reitan (6)
Lisa Reitman (1)
Sylvia Ritchie (1)
Mark River (2)
Mariah Rogers (3)
Alexandra Rosner (1)
Sandra Ruffner (14)
Mari Sanborn (8)
Eliana Shani (1)
Noah Siegel (6)
Kimberlee Sing (1)
Mike Slama (2)
William Smith (1)
Luke Smithson (1)
Corinne Srsen (2)
Graham Steinruck (2)
Lorinda Sues (1)
Rachel Swenie (1)
Lucas Tao (1)
Garrett Taylor (3)
Melissa Tennille (1)
Katherine and Matt Thierfelder (2)
Nany Toenyan (9)
Aaron Tupac (3)
Gyorgyi Voros (2)
Sinclair Wadew (1)
Caleb Washington (1)
John Wheeler (10)
Krista Willmorth (2)
Andrew Wilson (2)
Spencer Wimmer (3)
Daniel Winkler (1)
Louise Woo (1)
Meredith Woods (1)
Yihua Zhang (2)

Species List:

Mucoromycota
Endogone sp.

Myxomycota
Hemitrichia decipiens

Ascomycota
Aleuria aurantia
Ascocoryne sarcoides grp.
Calycina citrina
Chlorociboria aeruginascens
Cudonia circinans grp.
Diplocarpon rosae
Elaphomyces sp.
Genera sp. (x2)
Gyromitra infula
Helminthosphaeria clavariarum
Helvella
- *crispa*
- *elastica*
- *vespertina*

Hypoderma pacificensis
Hypomyces
- *aurantius*
- *lactifluorum*

Icmadophila ericetorum
Lachnum gaultheriae
Leotia lubrica (x2)
Leucangium sp.
Mollisia sp. (x2)
Nectriopsis violacea
Otidea alutacea
Otidea sp.
Pachyphlodes sp.
Protocrea pallida
Rhytisma punctatum
Roseodiscus sp.
Sowerbyella rhenana
Spathularia
- *flavida*
- sp. 'Ocher' 583

Tarzetta
- *cupularis*
- sp.

Trichoderma
- *alutaceum*
- *leucopus*
- *pulvinatum*

Trichoglossum hirsutum
Tuber luomae
Tuber sp. (x3)
Xylaria hypoxylon

Basidiomycota
Agaricus
- *buckmacadooi*
- *diminutivus*
- *subrutilescens*

Alloclavaria purpurea
Amanita
- *muscaria*
- *pantherinoides*
- *porphyria*
- *silvicola*
- *smithiana* (x2)

Ampulloclitocybe avellaneialba
Armillaria solidipes
Artomyces piperatus
Asterophora lycoperdoides
Atheniella
- *adonis* grp.
- *aurantiidisca*
- *delectabilis*

Aureoboletus mirabilis
Aureonarius mirabilis
Auriscalpium vulgare
Baeospora
- *myosura*
- *myriadophylla*

Boletopsis grisea
Boletus
- *edulis*
- *fibrillosus*

Botryobasidium sp.
Calcipostia guttulata
Callistosporium luteo-olivaceum
Calocera
- *cornea*
- *viscosa*

Calonarius subsulfurinus
Cantharellus
- *formosus*
- *subalbidus*

Cheilophlebium haedinum
Chlorophyllum olivieri
Chondrostereum purpureum (x2)
Chroogomphus tomentosus
Chrysomphalina aurantiaca
Clavaria fragilis
Clavariadelphus ligula
Clavicorona taxophila
Clavulina
- *cinerea*
- *coralloides*

Clavulinopsis laeticolor
Clitocybe
- *nuda* grp.
- *odora* var. *pacifica*
- *rivulosa*
- *sclerotoidea*
- *tarda*

Clitopilus prunulus
Collybia
- *cirrhata* (x2)
- *cookei*

Collybiopsis
- *confluens*
- *peronatus*

Coltricia perennis
Connopus acervatus
Coprinellus micaceus grp.
Coprinopsis
- *acuminata*
- *lagopus*
- sp.

Coprinus comatus
Corticium minnsiae
Cortinarius
- *albescens*
- *alboviolaceus*

- *armeniacus*
- *atrosquamosus*
- *birkebakii*
- *boulderensis*
- *brunneus*
- *caesiifolius* (x2)
- *californicus*
- *camphoratus*
- *caperatus*
- *cinnamomeus* grp
- *citrinifolius*
- *clandestinus*
- *compulus* (x2)
- *croceus*
- *distortus*
- *gentilis*
- *glaucopus* (x2)
- *nauseosouraceus*
- *occidentalis*
- *olympianus*
- *pallidofolius*
- *pinophilus*
- *riederi*
- *scaurus*
- *seidliae*
- *semisanguineus*
- *subfoetidus*
- *substriatus*
- *superbus*
- *thiersii*
- *traganus*
- *variosimilis*
- *vibratilis*
- *violaceonitens*
- *violaceus*

Cortinarius sect. Telamonia sp.
Cotylidia diaphana
Craterellus neotubaeformis
Crepidotus crocophyllus
Crucibulum crucibuliforme
Cryptoporus volvatus
Cyanosporus caesius
Cystoderma
- *amianthinum*
- *aureum*
- *carcharias* var. *fallax*
- *granulosum*
- *jasonii*

Cystodermella adnatifolia
Cystolepiota seminuda grp.
Dacrymyces chrysospermus
Deconica
- *horizontalis*
- *montana*

Dermocybe sp.
Entoloma
- *medianox*
- *serrulatum*
- *trachyosporum*

Exidia recisa
Femsjonia peziziformis
Fibroporia radiculosa
Flagelloscypha minutissima
Floccularia albolanaripes
Fomitopsis
- *mounceae*
- *ochracea*

Galerina
- *badipes*
- sp.

Ganoderma
- *applanatum*
- *oregonense*

Gautieria sp. (x2)
Geastrum saccatum
Gerronema arrialbum
Gliophorus
- *laetus*
- *psittacinus*

Gloeophyllum sepiarium
Gloiodon sp.
Gomphidius
- *oregonensis*
- *smithii*
- *subroseus*

Gomphus
- *clavatus*
- *floccosus*

Guepiniopsis sp.
Gymnopilus
- *flavidellus*
- *luteofolius*
- *oregonensis*
- *punctifolius*
- *ventricosus*

Gymnopus alkalivirens
Hebeloma
- *alpinicola*
- *mesophaeum*
- *olympianum*
- *velutipes*

Heimiomyces fulvipes
Hemimycena gracilis grp.
Hemipholiota populnea
Hericium abietis
Heterotextus luteus
Homophron spadiceum
Hydnellum
- *aurantiacum*
- *caeruleum* (x4)
- *fuscoindicum* (x3)
- *peckii*
- sp. (x6)
- *suaveolens*

Hydnomerulius pinastri
Hydnum umblicatum
Hygrocybe
- *constans*
- *nebularis*
- *singeri*

Hygrophoropsis capreolarius
Hygrophorus
- *bakerensis*
- *camarophyllus*
- *graveolens*
- *piceae*

Hymenogaster sp.
Hypholoma
- *capnoides*
- *fasciculare*

Hysterangium sp. (x2)
Inocybe
- *albodiscoides*
- *calamistrata* grp.
- *lilacina*

pallidicremea
pudica grp.
Inosperma sororia grp.
Jahnoporus hirtus
Laccaria
amethysteo-occidentalis
proxima
Lactarius
aestivus
badiosanguineus
fallax grp.
glutigriseus
pallescens
rubrilacteus
scrobiculatus
tabidus
Laetiporus conifericola
Laetisaria fuciformis
Laricifomes officinalis
Leccinum ponderosum
Lentinellus ursinus
Lepiota
castanea grp.
castanescens
cristata grp.
magnispora
rubrotinctoides
Leptonia
formosa
sp. (x2)
Leucoagaricus
glabridiscus
roseolivida
sp.
Leucocybe connata
Leucogaster sp. (x3)
Leucopaxillus gentianus
Lycoperdon
dermoxanthum
perlatum
Lyophyllum
decastes
semitale grp.
Macrocystidia cucumis
Macrotyphula juncea
Marasmiellus filopes
Marasmius
epiphyllus
plicatulus
Melanogaster sp. (x2)
Melanoleuca sp.
Melanophyllum haematospermum
Merulius tremellosus
Metacampanella subdendrophora
Mucronella
fusiformis
sp.
Muscinupta laevis
Mycena
abramsii
acicula
aurantiomarginata
galericulata
haematopus
maculata
pura cmp.
quiniaultensis
rosella
silvae-nigrae
stobilinoidea
salalis
Neoalbatrellus subcaeruleoporus
Nidula candida
Nolanea
cetrata
hirtipes
subcapitata
Onnia
subtriquetra
tomentosa
Osteina
obducta
undosa
Owingsia sp. 'PNW01'
Panellus mitis
Paralepista flaccida
Peniophora
albobadia
aurantiaca
Phaeoclavulina myceliosa
Phaeolus schweinitzii
Phellodon
atratus
sp.
Phlegmacium variocracens
Phloeomana speiria
Pholiota
adiposa
astragalina
decorata
highlandensis
Phylloporus arenicola
Picipes badius grp.
Pirex concentrica
Pleurocybella porrigens
Pleurotus ostreatus grp.
Plicatura nivea
Pluteus
atromarginatus
cervinus
fulvobadius
Polyozellus
atrolaxulinus
marymargaretae
Porodaedalea pini grp.
Porphyrellus porphyrosporus
Postia
fragilis
guttalata
ptychogaster
Psathyrella longistriata
Pseudoarmillariella ectypoides
Pseudohydnum gelatinosum
Pseudoomphalina
angelesiana
intermedia
Psilocybe pelliculosa
Pycnoporellus fulgens
Pyrrhulomyces astragalinus (x2)
Ramaria
apiculata
araiospora
cystidiophora
gelatinosa
var. *oregonensis*

rubrievancescens
stricta
testaceoflava
velocimutans
Rhizopogon sp. (x4)
Rhodocollybia oregonensis
Rhodocybe nuciolens
Rhodofomes cajanderi
Rickenella
fibula
swartzii
Roridomyces roridus
Russula
atrata
brevipes
cerolens
emetica
mordax
murrillii grp.
olympiana
phoenicea
serissima
turci
zelleri
Sarcodon
calvatus
imbricatus
sp.
Schizophyllum commune
Scleroderma polyrhizum
Simocybe serrulata
Sistotrema confluens
Spodocybe trulliformis
Steccherinum bourdotii
Stereum
hirsutum
sanguinolentum
Stropharia ambigua
Suilllus
caerulescens
lakei
punctipes
Tapinella
atrotomentosa
panuoides
Thelephora
caryophyllea
palmata (x2)
terrestris
Tomentella sp. (x6)
Trametes
gibbosa
versicolor
Tremella mesenterica
Tremiscus helvelloides
Trichaptum abietinum
Tricholoma
amnophilum
arvernense
atroviolaceum
aurantium
dulciolens
equestre
focale
murrillianum
nigrum
pardiniontis
pardinum
portentosum
saponaceum (x2)
subacutum
sulphureum (x2)
terreum var. *cystidiotum*
vaccinum
venenatoides
Tricholomopsis
decora
rutilans
Truncocolumella citrina
Tubaria conspersa
Turbinellus kauffmanii
Typhula phacorrhiza
Veluticeps fimbriata
Xenasmatella vaga
Xerocomellus
atropurpureus
diffractus
mendocinensis
rainisii
zelleri
Xerocomus subtomentosus
Xeromphalina
campanella grp.
cauticinalis
cirris
fulvipes

Thank you to everyone that attended Pacific Northwest NAMA Camp!

Agaricus julius (photo: James Chelin)

Why *Agaricus julius* is the Ideal Choice for Colorado's State Mushroom

JOINT COMMITTEE TO ESTABLISH A STATE MUSHROOM FOR COLORADO

In late 2024, after a couple years of discussions and stalled attempts, the Joint Committee to establish a state mushroom for Colorado came together as a passionate group of professional and amateur mycologists, to coordinate efforts.

Public testimony given via video to the Colorado State House Committee on State, Civic, Military & Veterans Affairs on the topic of bill HB25-1091 Designation of a State Mushroom. Clockwise from top right, Dr. Amy Honan, Brian Barzee (Pikes Peak Mycological Society), and Hamilton Pevec (Western Colorado Mycological Association) speak (and dress!) in support of *Agaricus julius* as a new state symbol for Colorado. (photo: Dr. Amy Honan)

The committee was comprised of the following members: Dr. Andrew W. Wilson, Denver Botanic Gardens, NAMA Voucher Collection Project; James Chelin, Pikes Peak Mycological Society; Anne Lee Foster, FunDiS; Dr. Amy Honan, Crested Butte Botanic Gardens; Alex Merryman and Greg Sanchez of Colorado Mycological Society; and Hamilton Pevec, Western Colorado Mycological Association.

The committee developed a list of criteria for selecting a Colorado state mushroom. This criteria was applied to several candidate mushroom species. These criteria were as follows:

- **Geographic relevance:** Is the species local and endemic?
- **Recognizable/charismatic:** Is it pretty and recognizable?
- **Biological relevance:** How is this mushroom relevant and unique to the ecology of the state?
- **Social relevance:** Does it have value to people?
- **Originality:** Is the mushroom similar to another state's mushroom symbol?
- **Taxonomic stability:** Is the species name likely to change in the near future?
- **Has a compelling story:** Is there a unique and interesting story for this mushroom?

After careful evaluation of the candidates, the committee arrived at a consensus choice of *Agaricus julius*.

All the criteria seemed to fall into place for this species. Apart from *A. julius* being a stately and charismatic mushroom and a choice edible, the mushroom's numerous features and history helped motivate the committee in selecting this species to represent the State of Colorado.

While the diversity of mushroom species and numerous choices available in Colorado made this decision challenging, the list of criteria the committee developed simplified the process greatly. As the best choice, *Agaricus julius* possesses all the qualities the group saw in a state mushroom symbol. The committee's criteria and how *A. julius* fulfills them are listed below. (The "+" symbols reference these as positive criteria.):

- **Geographically relevant:** (+) *Agaricus julius* occurs in Colorado and has a potential range that extends through the Rocky Mountain region. It was described from Colorado in 2016, making it a distinct Colorado species.
- **Recognizable/charismatic:** (+) *A. julius* is a choice edible and has a delightful and unique cherry-almond scent.
- **Biologically relevant:** (+) *A. julius* is a saprotrophic fungus. Saprotrophic fungi are critical for decomposing/composting organic plant material in Colorado's forests.
- **Socially relevant:** (+) *A. julius* is prized by mushroom hunters for its edibility. As a saprotrophic mushroom species, it provides opportunities to educate about the importance of fungi in the carbon cycle as it helps to break down carbon locked away as plant matter.
- **Originality:** (+) *A. julius* is the first and only species of *Agaricus* to be proposed as a state mushroom in the United States. (https://en.wikipedia.org/wiki/List_of_U.S._state_mushrooms).
- **Taxonomically stable:** (+) *Agaricus julius* was named in 2016 as an unique species. Previously, this species was identified as *A. augustus* in Colorado. Using DNA-sequence data, mycologists learned that this species was separate from the true *A. augustus*. As a result, the taxon is considered stable and the species will not be reconsidered as a different species.
- **The species tells a compelling story.** (++) This mushroom is considered a true Colorado species. This species was recognized after examining specimens collected in Colorado (see the taxonomically stable section above). Because it was previously recognized as *A. augustus*, and because *A. augustus* is

commonly known as "The Prince," it is somewhat appropriate to refer to *A. julius* as, "The mushroom formerly known as 'The Prince.'" However, from a nomenclatural standpoint, *A. julius* is named after the Roman emperor Julius Caesar. As a result, the more formal common name for *A. julius* is "The Emperor." In addition, it is found in association with another Colorado state symbol, the Colorado Blue Spruce (*Picea pungens*).

> *"Since* Agaricus julius *has been identified as* Agaricus augustus *by Rocky Mountain collectors for decades, and since* A. augustus *is often given the common name "The Prince," Kerrigan suggests that* A. julius *might now become, "The Emperor formerly known as Prince."*
>
> M. KUO ON R. KERRIGAN, 2016

As of the writing of this article, bill HB25-1091 was introduced by Colorado State Representative Jacque Phillips and State Senator Kyle Mullica. Much of the work promoting *Agaricus julius* and introducing it to the Colorado State legislative process was done by Greg Sanchez and his students at Horizon High School. Kelsey Harbart provided Greg with support in making contact and establishing the bill's sponsors.

The bill was considered by the House Committee on State, Civic, Military & Veterans Affairs on February 4th, 2025. There, several members of the state mushroom committee provided public testimony. Greg Sanchez—with several of his high school students—Dr. Andrew Wilson, Brian Barzee (Pikes Peak Mycological Society) and Dr. Amy Honan all spoke of the importance of a state mushroom and described the beauty and ecological significance of this species. Hamilton Pevec entertained the House Committee by appearing on Zoom in full mushroom regalia and reciting his poem to *A. julius*, "Rare, Precious, Beautiful and Delicious." After the testimony, the bill passed the House Committee with an unanimous vote. The next day, the House chamber voted and approved of the bill with a vote of 55 to 8.

The bill has since been introduced to the Senate Committee on State, Veterans, & Military Affairs and on March 6th, 2025 passed that committee unanimously, 4-0. Next is the Senate floor!

The Other Candidates

Choosing *Agaricus julius* from among the other candidates took some negotiating but the criteria the joint committee established made the process easier. Here are the other candidates, along with their respective considerations.

While any of these choices would have made for a great symbol for the State of Colorado, their placement behind *Agaricus julius* does not warrant their dismissal entirely. Because Colorado has five animal state symbols (six if you count the stegosaurus), four state plant species and even three rocks, why not more than one mushroom species? Perhaps in a few years Colorado will nominate the state ectomycorrhizal mushroom as the next fungal state symbol!

Sarcodon imbricatus

Also known as the "hawk's wing," this robust and charismatic fungus is the other toothed fungus on the list next to *Hydnellum suaveolens*. This important ectomycorrhizal species is also edible. However, most species of *Sarcodon* are not easily distinguishable from one another. As a result, the potential for taxonomic confusion between this and other species makes this choice a challenge. (photo: James Chelin)

Hydnellum suaveolens

This species would definitely qualify as an original choice. It has an uncharacteristic appearance as a "mushroom" and might not be considered handsome by everyone. However, this species has a number of charismatic features, including teeth instead of gills and a perfume-like odor of sweetgrass. Another quality relevant to Colorado is that it is the only mushroom containing two of the four colors in the Colorado state flag (blue and white). (Photo: Terri Clements)

Cantharellus roseocanus

This species is also a popular and attractive mushroom. Unfortunately, it suffers even more in the category of originality as at least three states have chosen a chanterelle for their state mushroom. (Photo: James Chelin)

Boletus rubriceps

This species is a truly charismatic, robust and popular mushroom in Colorado. There are many significant positives that make this an ideal choice. However, Utah has already made *Boletus edulis* their state mushroom, making this an unoriginal choice. (Photo: James Chelin)

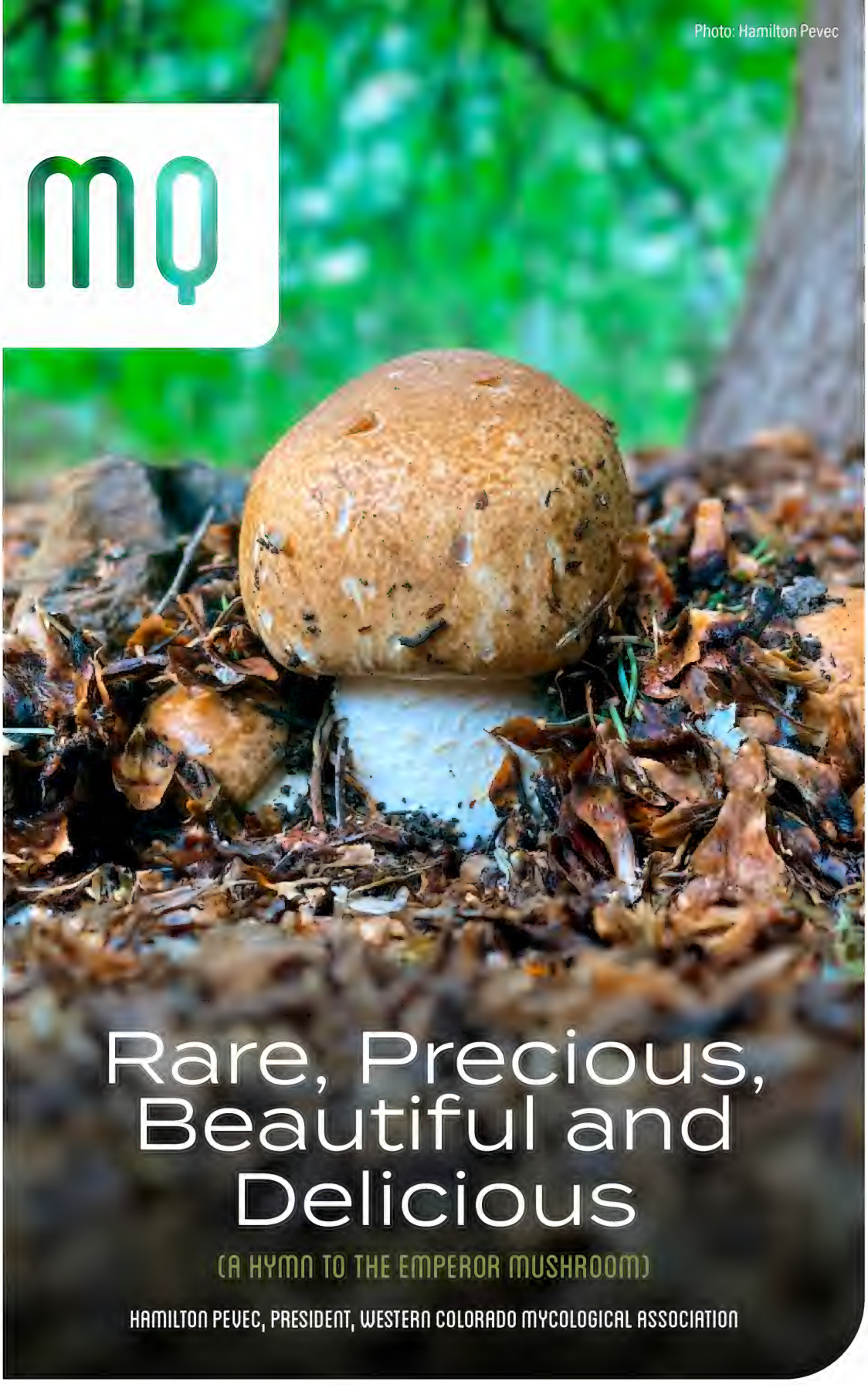


Photo: Hamilton Pevec

Rare, Precious, Beautiful and Delicious

(A HYMN TO THE EMPEROR MUSHROOM)

HAMILTON PEVEC, PRESIDENT, WESTERN COLORADO MYCOLOGICAL ASSOCIATION

I. The Crowned One

Beneath the spruce where twilight secrets lie,
A sovereign stirs, adorned in autumn's gold.
Once prince, now king, beneath the boundless sky,
His regal cap the forest's hand doth hold.

Rare jewel of earth, where loam and shadow meet,
Thy scent—a whispered hymn of moss and myrrh.
Thy flesh, ambrosial, rich with woodland heat,
Draws forth the hunter's prayer, the seeker's stir.

Oh, Julius! Monarch of the hidden glade,
By fate's decree thy presence graces few.
Through tangled paths, thy glory undelayed,
A gift both old and yet forever new.

To glimpse thee once, to taste, to know thy form,
Is joy unearthed—elusive, rich, and warm.

II. The Veil of the Forest

Beneath Colorado's spires, thy kingdom sleeps,
Where alpine winds consort with whispered rain.
Thy golden cap, where fading sunlight creeps,
Glimmers—a beacon in the wild's domain.

Thy gills run dark, like rivers cut in stone,
A secret script inscribed in nature's hand.
A musk of almond lingers, soft, unknown,
A fleeting spell upon the hallowed land.

O Emperor, veiled prince of mountain air,
Thy beauty stirs the hunt, the fervent quest.
Each footstep sings a pilgrim's humbled prayer,
To seek, to kneel, to pluck thee from thy rest.

To hold thee close, to savor, to recall,
Is to embrace the woods—and have them all.

III. The Living Myth

Beneath the spruce where ancient shadows lean,
A king arises, crowned in russet fire.
His cap—gold-scaled—proclaims his rule serene,
A sovereign born of earth's profound desire.

His gills, like dusk upon the canyon's crest,
Run deep as veins that carve the mountain's face.
His musky breath, of almond's soft caress,
Perfumes the air—a fleeting, rare embrace.

His stipe, a pillar strong, a throne of white,
Marked by the ring that time alone bestows.
No common prince, but Emperor in might,
A legend whispered where the wild thing grows.

To find thee once, to see, to breathe, to taste,
Is to know beauty—brief, yet never waste.

DNAMA COMMITTEE, JOSHUA BIRKEBAK, CHAIR

Introduction

Edible and medicinal mushrooms and mushroom products contribute $45 billion USD annually to the global economy (Niego *et al*: "Contribution of Fungi to the Global Economy").

A version of this article will appear in the June 2025 edition of NAMA's journal, Mcilvainea.*—Ed.*

In recent years, the number of commercial mushroom products has increased and so has inaccurate or unclear product labeling, even among food products subject to FDA labeling requirements (Rivas-Ferreiro *et al*: "It's What's Inside that Counts: DNA Barcoding of Porcini Commercial Products Reveals Product Mislabeling;" Cutler II *et al*: "What's for Dinner this Time?: DNA Authentication of 'Wild Mushrooms' in Food Products Sold in the USA"). The situation becomes even more concerning when less-regulated supplements and herbal products are considered (Loyd *et al*: "Identifying the 'Mushroom of Immortality:' Assessing the *Ganoderma* Species Composition in Commercial Reishi Products;" Raja *et al*: "DNA Barcoding for Identification of Consumer-relevant Mushrooms: A Partial Solution for Product Certification?"). Despite widely documented instances of erroneous labeling, regulations in the United States currently remain vague with regards to labeling requirements for mushroom products.

DNAMA, NAMA's DNA-sequencing Committee, set out to enlist the help of the NAMA community at large to send in interesting commercially available mushrooms to help us gain a better idea of what can be purchased by consumers across North America. Ultimately, 16 people submitted a combined 235 discrete samples, ranging from locally sourced turkey tail (*Trametes versicolor*) tea from an apothecary to cellophane-wrapped *Ramaria* encountered in an open-air market in Mexico. While most samples consisted of

dehydrated food products, many people sent in mushrooms purchased fresh, pickled, brined or canned, then dried at home. All we asked was that people mostly avoid sending in a few things: button mushrooms (commercially-farmed *Agaricus* species), shiitake (*Lentinulus* (*Lentinus) edodes*) and *Psilocybe* species.

Samples were analyzed by the Ohio Mushroom DNA Lab according to Stephen Russell's Oxford Nanopore third-generation sequencing protocol, which is used for other mass-DNA-sequencing initiatives by Mycota Labs and FunDiS. Each and every result was carefully scrutinized by the first cohort of the Volunteer Sequence Validation Corps (VSVC), which was established to provide education on current DNA-sequencing methods and invite motivated members of the broader community to participate in DNA-sequence analysis. We periodically open up training cohorts and no prior experience is necessary, so please reach out if you are interested in being notified when the next round opens.

Results

Unfortunately, we had a relatively low success rate compared to working with our usual specimens. The quick and high-throughput method that works well with carefully collected and well-dried mushrooms submitted by mycologists did not successfully generate DNA sequences from any canned, pickled or brined products. Even among the dried products, we only had an approximate 33% percent success rate, which may be explained by the

long (sometimes multiple-year) shelf life and other preservation treatments. If we were to try this project again, we would likely either only accept mushrooms bought fresh or utilize more exacting, expensive and time-consuming DNA-extraction techniques.

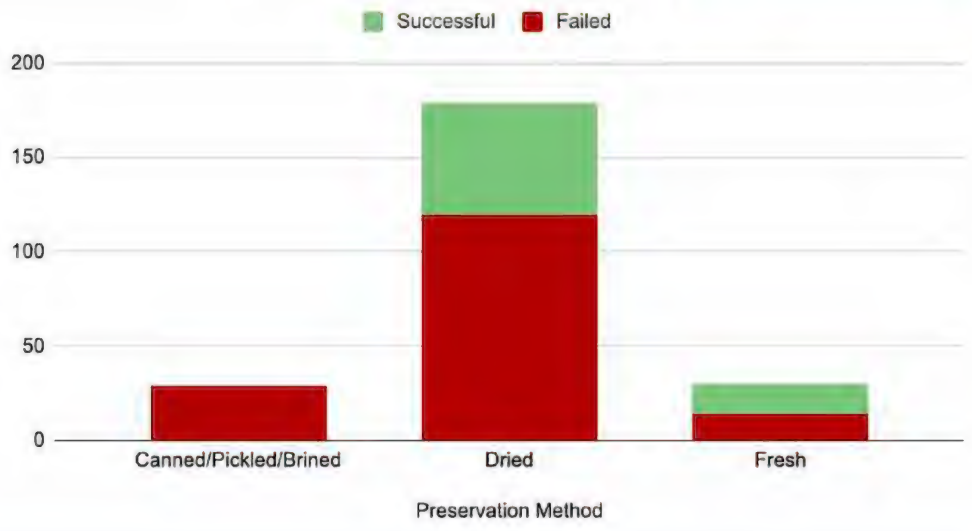
The most commonly submitted fungus was what was typically called "porcini" (though also known as king bolete, yellow bolete or *Boletus edulis*. Unsurprisingly, given several recently described species in the king bolete group from food products themselves, multiple species were found, with the most common being *Boletus bainiugan*. These results suggest that the majority of the products are sourced mainly from East Asia. Perhaps more surprising is that multiple food products claiming to contain porcini were instead found to contain the slippery jack, *Suillus luteus*.

The next most common mushroom groups submitted were the oyster mushrooms (*Pleurotus* spp.) and the black fungus (*Auricularia* spp.). Identification of oyster mushrooms was complicated by the fact that many commercial strains are produced through hybridizing closely related species (A. Barh, *et al*, "Genetic Improvement in *Pleurotus* (Oyster Mushroom): a Review.") *Auricularia* had the dubious distinction of being sometimes referred to only as "fungus" on the FDA ingredients list. We find it a bit disconcerting that the FDA is willing to accept a designation as broad as if one were to see ingredients like "plant" or "animal."

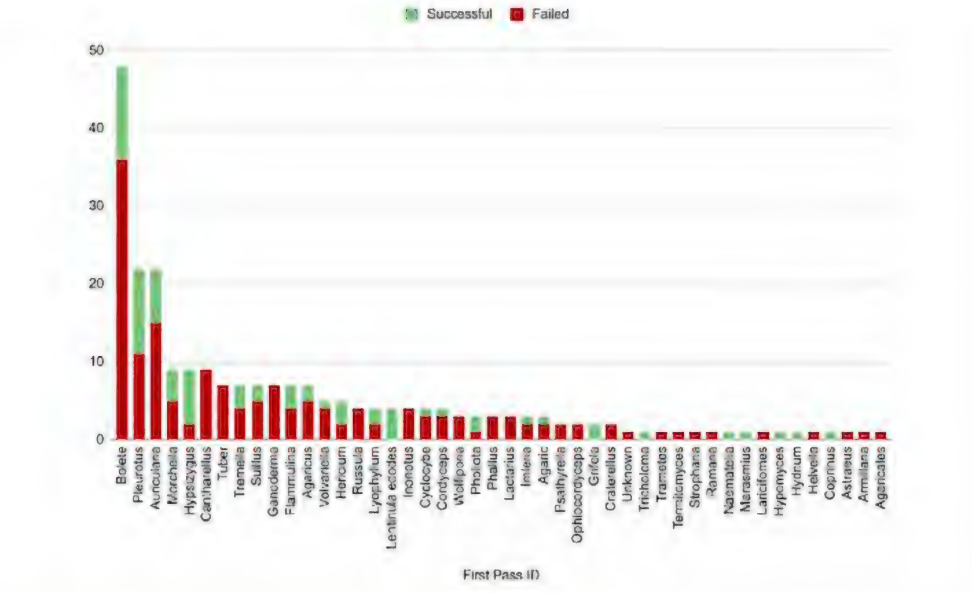
If you would like to take a look at the data or all of the interesting submissions in our iNaturalist project, please explore further. Do you think we should do this again in 2025? If so, should we focus on a specific group or product type? What questions do you have regarding fungal food and medicinal products and how could we answer them with DNA sequencing? Please reach out and let us know by emailing dnama@namyco.org.

Data graphics avaliable on the following page.

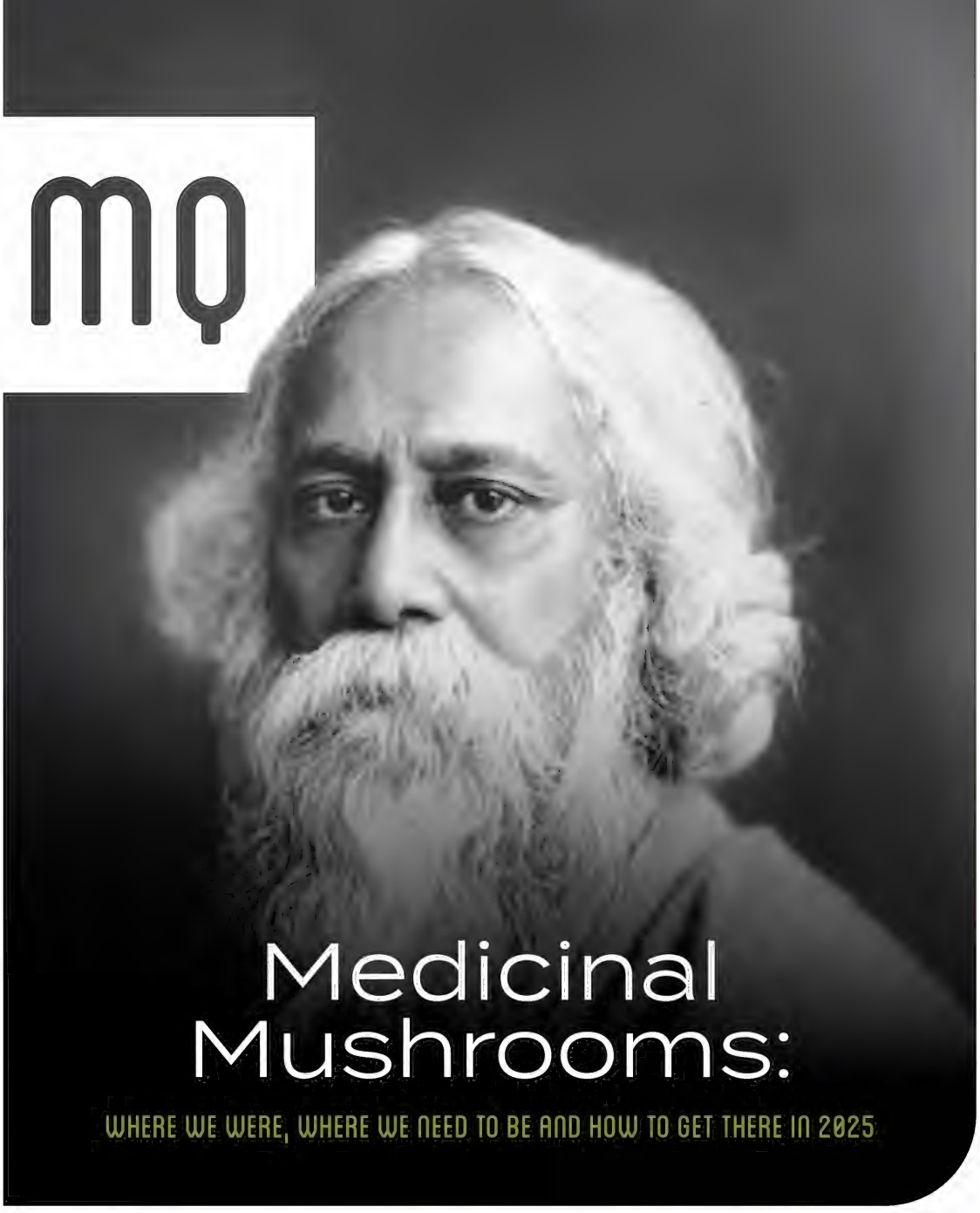
SUCCESS RATE BY PRESERVATION METHOD



PASS RATE BY GENUS



Success and failure rate by preliminary identification to genus based on product label information and visual analysis.



Medicinal Mushrooms:

WHERE WE WERE, WHERE WE NEED TO BE AND HOW TO GET THERE IN 2025

DR. DAVID WALDE
MD, FRCPC, DONT,
MEDICINAL
MUSHROOMS
COMMITTEE

"You cannot cross the sea merely by standing and staring at the water."

RABINDRANATH TAGORE (NOBEL PRIZE FOR LITERATURE, 1913)

Disclaimer

This document reflects the author's personal understanding and approach to this difficult topic and does not represent the opinions of NAMA or its Medicinal Mushrooms Committee. There are no conflicts of interest to report.

Preamble

In the past couple of decades, there has been enormous growth in technology that will revolutionize our approach to the study and analysis of medicinal fungi. Most amateur mycologists are unaware of these advances and I hope this article will shed some light on these exciting developments. The subject is very complex. I have tried, in links to papers and videos, to give readers access to a deeper understanding of these topics. I have screened the links for veracity and artificial intelligence (AI) hallucinations and/or confabulations to the best of my ability.

Overview of the topics covered:

- History of taxonomy
- Modern taxonomy and DNA sequencing.
- Metabolomics and spectroscopy
- Molecular engineering and KEGG (*Kyoto Encyclopedia of Genes and Genomes*), allowing the biosynthesis of identified medicinal compounds.
- The role of Alpha Fold 3, Rosetta Code and AI.
- The need for well-conducted clinical trials and the harnessing of AI.

Introduction

It is critical, when approaching any product of fungal origin (indeed, of any biological source) with a claim to medicinal effectiveness that we are all on the same page. We must be talking about the same fungal species, containing the same known chemicals (secondary metabolites) that appear in a standardized purified product and which can be assessed by an Internationally recognized protocol.

This will give the International scientific community the ability to reach valid conclusions regarding any clinical benefit. Mycological literature is vast, of varying quality and sometimes contradictory, which is going to need the assistance of Artificial Intelligence for consolidation, with crosschecks for veracity and validity.

Taxonomy is Paramount

For medicinal fungi and their healthcare applications, it is important to know the chemical components of each fungus and to select out those that are acting alone or in synchrony (the entourage effect) to achieve a medicinal (functional) outcome. The use of medicinal fungi dates back millennia and there is voluminous information on their possible and probable benefit. This information is, however, cluttered with anecdotes, unsubstantiated claims and ad hoc usage, with many studies that lack scientific rigor. Previously, we did not have the tools to approach a thorough investigation of the fungal kingdom and to establish the "fungal niche" in our medicinal armamentarium; we lacked the necessary technology. Now these hurdles no longer exist. The amateur-mycology community should be aware of the tools that are available and how each plays a part in overcoming these deficiencies. The advances have been astounding, coming to us with amazing rapidity.

History

The Linnaeus era (A.D. 1735) gave us a binomial system and provided organization. Taxonomy (arrangement method) became the scientific study of naming and classifying groups of biological organisms and their evolutionary relationships.

Initial naming and placement in any schema categorized fungi based on detailed major observable features like shape, color, odor, taste and edibility. The importance of habitat, weather, regional differences and the roles of fungi in the tree of life and even our own microbiome have been well documented. Dyes and stains are now in daily use as are cultures with mating compatibility.

We teach these basics even today to our amateur classes. Identification keys have helped us considerably over the years and remain in widespread use. In the Pacific Northwest, where I am located, we have the Pacific Northwest Key Council keys,

as well as superb computer-generated programs, including MycoMatch by Ian Gibson and the Pictorial Keys of Danny Miller, all accessible through the South Vancouver Island Mycological Society website. Microscopy, in all its evolving forms, has become an invaluable tool adding to macrofungal observations; clicking here links you to a brief history of microscopy, updated in 2024 but dating back to about 710 B.C., from the Science Learning Hub—Pokapū Akoranga Pūtaiao, The University of Waikato Te Whare Wānanga o Waikato.

Pacific Northwest Key Council

We are all very familiar with Domain, Kingdom, Phylum, Class, Order, Family, Genus, Species and all their subsections; this Wikipedia article provides a very comprehensive coverage of taxonomy, not limited to fungi but equally important in all bioscience fields.

Modern Taxonomy and DNA Sequencing

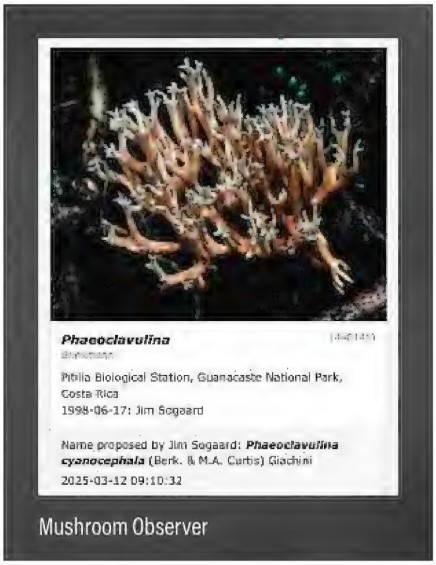
DNA sequencing has radically changed our approach to identification, resulting in more precise classifications and establishing strong evolutionary relationships among different fungal lineages. This specialty continues to evolve, as evidenced by frequent taxonomic name changes.

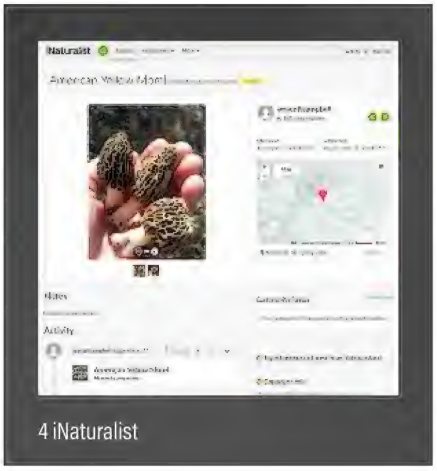
Russula - easily recognized stature (browse the photos to see what they have in common)
entirely white when young except cap cuticle usually coloured and stem sometimes flushed reddish.
brittle (they do not fray when broken and the stem can snap audibly like a piece of chalk, a quality shared only by Lactarius).
all parts may stain brown, red or black, and the gills may turn yellow to orange from the spores
adnate to decurrent gills. Not hygrophanous. Never a partial veil. Found mostly on the ground.
Russula and Lactarius are not related to other gilled mushrooms. Microscopically, the spores are round with warts and ridges that turn black in iodine.
Lactarius - if you break the gills of a fresh Lactarius, white or coloured milk will bleed out.
they are also brittle textured like the related Russula, so their stems can break like chalk.
adnate to decurrent gills. Not hygrophanous. Never a partial veil. Found mostly on the ground.
unfortunately more variable in stature than Russula, but you can learn to recognize one on sight with a certain sixth sense. Try here as a last resort for an old mushroom that has stopped talking. Focus on if the stem can be cleanly broken.
Pictorial Keys of Danny Miller

We have progressed through Sanger and Next Generation Sequencing. Amateur mycologists, with their many eyes on the ground, are making scientific contributions to data banks (e.g., Mushroom Observer and iNaturalist), and herbaria, recording their field finds, vouchering and DNA sequencing. Another go-to is the Fungal Diversity Survey (FunDiS) initiative. On the FunDiS website, they "envision a world in which the fungal Kingdom is fully documented, appreciated and protected." Here, under resources, you will find Sigrid Jakob's

"The Ultimate Mushroom List" and a phylogeny poster by Jacob Kalichman, for the geeks amongst us.

Many NAMA-affiliated mushroom clubs now have their own inexpensive portable sequencing equipment (e.g., Oxford Nanopore). Members are proficient in the use of genomic databases. Other clubs refer out their collections for sequencing, as costs continue to plunge. The cost for a Nanopore ITS barcoding has gone down to less than a dollar per sample, a reduction inconceivable even a decade ago.


Phaeoclavulina
Pitilla Biological Station, Guanacaste National Park, Costa Rica
1998-06-17: Jim Sogaard
Name proposed by Jim Sogaard: Phaeoclavulina cyanocephala (Berk. & M.A. Curtis) Giachini
2025-03-12 09:10:32
Mushroom Observer


4 iNaturalist

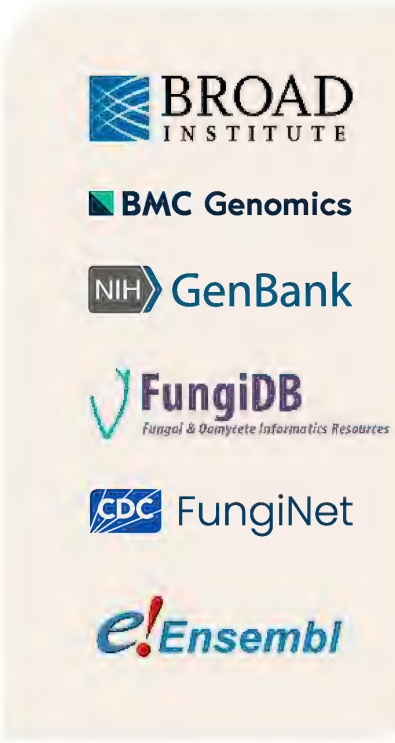
The following sites are rich in information, data and tutorials, enabling the reader to pursue the subject in more detail. For many of us amateur mycologists, some of the articles will prove challenging; however, it is vital to try and gain an understanding of advances in our field.

This article is by Stephen Russell from the Hoosier Mushroom Society; Russell has been invaluable to so many of us getting into the field of sequencing: "Nanopore ITS Barcoding: 10x More Throughput for 10x Less Cost—Mycological Society of America."

Other Relevant Links:

- History of the Fungal Genome Initiative | Broad Institute
- BMC Genomics
- Next-generation fungal identification using target enrichment and Nanopore sequencing | BMC Genomics | Full Text, by Yue *et al.*
- GenBank Overview NIH genetic sequence database, a heavily used site with a fungal link.

Fungal Diversity Survey (FunDiS)



- FungiDB - Database Commons, FungiDB: A worldwide database collection.
- FungiNet | Fungal Diseases | CDC: a global medical database of whole-fungal-genomic-sequencing which, at the time of writing, is undergoing modification to comply with the new U.S. President's recent executive orders.
- EnsemblFungi: a compendium of a number of database genomics.

DNA sequencing is the gold standard of taxonomy but not in isolation of macro- and microfungal features. This process allows the assessment of any specimen under discussion in one locale in order to determine if it is the same as specimens under consideration in another and, subsequently, to allow the comparison of the metabolites.

For medicinal fungi, this precision is critical. It is vital in the medicinal field to identify and isolate the active metabolites that could have a therapeutic benefit. The subsequent step is the synthesis of the given metabolites of interest, which does away with the need for that mushroom.

Adequate quantities of a purified chemical/metabolite are needed for laboratory and clinical investigations, which has been a limitation in the past. Almost all fungal metabolites can now be identified and biosynthesized and these principles apply to any biological material. This issue can be resolved through use of the following practices:

1. Identifying genes responsible for a specific metabolite and splicing those genes into a production organism (e.g. bacterium or yeast).
2. Providing the building blocks along the synthesis chain to create the chemical of interest, also known as "metabolic engineering."

Of course, the above is a gross oversimplification of the necessary process; evolution is being challenged and possibly enhanced! Please see the link to the talk by David Baker.

Metabolomics and Spectroscopy

Metabolomics is the study of metabolites, the chemicals involved in all functions of a living organism. Spectroscopy allows the identification and quantification of these chemicals in fungal specimens using, for example, nuclear magnetic resonance (NMR) and mass spectroscopy (MS). There are many other forms of spectroscopy, each having a particular role in analysis. With fungi, there is the need to establish the chemicals present in the different stages of life cycle, their location anatomically and in what quantity. This analysis will give us the molecules for investigation and application in healthcare. There are portable spectrometers; their quality and comprehensiveness dictate their cost, with each geared to a specific role.

The following is a very comprehensive article from Wikipedia with all the appropriate links and references: Metabolomics - Wikipedia. This article will introduce you to the complexities of molecular identification, equipment and databases, e.g., Metlin and XCMS. Metlin (Scripps) and XCMS have now consolidated.

You can learn about molecular epidemiology, pathology, precision medicine and all the "omics:" genomics, proteomics, lipidomics, etc. from Human Metabolome Database in Alberta, Canada.

Below is a free training site which is not only relevant to metabolomics but also a lot of the other topics mentioned herein. It is a database located at the Wellcome Genome Campus in Cambridge, UK: An introduction to EMBL-EBI resources | EMBL-EBI Training.

MetaboAnalyst is a Canadian website that hosts links to other organizations in Canada and the USA and provides a link for free training modules!

Many of the above sites require some specialized knowledge and experience to be appreciated but are included here to give the reader some idea of what is evolving in these corridors of research.

Molecular engineering and KEGG (Kyoto Encyclopedia of Genes and Genomes) with bulk synthesis of identified chemicals of medical importance KEGG provides a road map of the chemical building blocks, and in what sequence they need to be applied to build a molecule of interest. It is metabolic engineering but only one small part of what can be achieved.

Bioengineering takes the DNA from a fungus that produces a metabolite of interest and splices it into yeasts/bacteria, allowing these organisms—under the right conditions—to become chemical factories with production that is cheaper and faster compared to the standard methods of chemical synthesis and mushroom extractions.

The following articles and videos allow a comprehensive understanding of what is involved:

- Kristala L.J. Prather from MIT and her company, Kalion; Prather has been doing DNA YouTube videos for about 10 years and these are readily available.
- How to Make Psilocybin with Yeast | Journal Club BioTech DIY: this video shows how to use metabolic engineering and the KEGG database for the synthesis of psilocybin and discusses the benefits of using this method over any other, relating to speed, ease and costs.
- The paper being discussed can be accessed here: Metabolic engineering of Saccharomyces cerevisiae for the de novo production of psilocybin and related tryptamine derivatives - ScienceDirect
- Ted Talk by David Baker, who won the Noble Prize in Chemistry in 2024. He is an excellent teacher. There are a number of his talks online, all excellent. Here, he explains the basis of his research that led to his Nobel Prize.

How Artificial Intelligence (AI) Cracked the Protein-folding Code and Won a Nobel Prize in 2024. Five scientists received Noble Prizes in

2024 for Chemistry and Physics, including Geoffrey Hinton, the "Godfather of AI," from the University of Toronto. Google's DeepMind project helped resolve the impossible: an understanding of protein folding. A simplistic explanation: proteins are not just lines of chemicals in a row as often depicted in texts. They have a 3-D structure. When linked together appropriately, each group of proteins can start to fold into a specific shape and role. Any deviation from this shape with misfolding results in consequences for an organism.

The following links take you through the where, what and how of protein-folding understanding and why this achievement is going to revolutionize biological sciences, with a considerable impact on healthcare and the medicinal pipeline:

- A podcast from the UK with Dame Janet Thornton
- How AI Revolutionized Protein Science But Didn't End It
- The journey includes the contribution of Rosetta Code, a computational AI tool.

Clinical Trials of Medicinal Mushrooms

We now have the tools to approach the investigation of these fungi and their metabolites/chemicals on a structured basis in order to establish their roles in healthcare. While these tools are being applied, it is important to pull together all the data that already exist across all publications. Almost certainly there is a huge bank of unpublished data in the vaults of universities, healthcare organizations

and pharmaceutical companies. Let us take this material and train an AI platform to see if at last there is a possibility of reaching some conclusions on how best to coordinate and organize this information. Although reaching this goal is a huge undertaking, it is necessary and can be achieved. A few days ago, this writer was at a presentation where the speaker and his team had trained an AI model to allow a conversation with a cell; it appears that anything is possible!

Conclusion

I am an amateur mycologist. I was hooked on mycology in 1970 after eating my first edible, a blewit (*Collybia* (*Lepista*) *nuda*), in the UK. I am now a retired medical oncologist in Canada; throughout my career, I have treated a lot of patients and lost some to invasive fungal infections. The document laid out above is my personal understanding of how medicinal mushrooms need to be investigated scientifically.

Close-up of a pair of blewits.

I am a member of the Medicinal Mushrooms Committee of NAMA, an organization of amateur mycologists with over ninety affiliated mushroom clubs and thousands of members throughout North America, including Canada and Mexico, with strong links to professional mycologists. NAMA's mission is "promoting, pursuing and advancing mycology" and I hope it will take up the challenge of coordinating what is now both necessary and possible, through use of the tools I have listed above, in order to advance the science of medical mycology and medicinal fungi.

Where we were and where we are now necessitates where we need to be.

NAMA

Eats

Unlock the Culinary Secrets of Mushrooms and Elevate Your Gastronomic Experience

Culinary Arts Committee 2025 *Chopped*-style Challenge Kicks Off!

JULIE SCHREIBER, CULINARY ARTS COMMITTEE CHAIR

It's that culinary-artistic time of year again, when the NAMA Culinary Arts Committee invites mycophagists far and wide to showcase your creativity through what has become a beloved part of our shared mycoculture: the *Chopped*-style Challenge!

By now, if you are any kind of cook or foodie, you are familiar with *Chopped*, the thrilling tv show featuring the ever-more-ridiculous challenge of incorporating seemingly impossibly incompatible ingredients into a cohesive, delicious dish.

The NAMA Culinary Arts Committee is giving you a chance to shine in your own competition! Best part is, you could leave out the salt and we wouldn't know; your description, photos, creativity and presentation will be the criteria for judging. ANYONE can participate but only one will win: ARE YOU READY?

One winner will receive a scholarship for registration and room and board, at the prevailing double-occupancy rate, to attend NAMA New England, NAMA's 65th Annual Foray, at Potash Hill near Marlboro, Vermont from September 11 to 14.

Recipes and photos will be featured in the *Mycophile Quarterly*; you may click here to view last year's finalists in the July-August-September MQ.

Following are this year's contest guidelines, submission dates and, of course, the list of truly challenge-ing ingredients selected through vociferous discussion among our robust Culinary Arts Committee! *Bon appétit!*

Required Ingredients:

1. Mushroom of your choice
2. Vegemite
3. Molasses
4. Bananas
5. Pistachios

Chopped-style Challenge Rules:

1. All required ingredients listed above MUST be used in one cohesive dish;
2. As long as you use the four ingredients and mushrooms, you can use ANY OTHER ingredients you choose. You may use staples from your own kitchen or shop for other ingredients for your dish: butter, cream, oil, onions, garlic, cheese or herbs, for example; however, leaning too heavily on these palette-pleasers might not take the cake…. be creative!
3. Your pictures or videos must be posted on Facebook or Instagram. PLEASE use the hashtag: #NAMAChopped2025 so that judges will be able to find your dish! These contest rules and application link may be found on the NAMA website (www.namyco.org), under the "Interests" tab, then select Culinary, then 2025 *Chopped*-style Challenge.
4. Judges will be NAMA Culinary Arts Committee members, who will rate your creation(s) based on the photos/videos, written description/recipe, presentation and overall creativity.
5. Please have your photos online and tagged by May 1, 2025. We will notify our winner by June 1, 2025.

Please note that in order to use the Annual Foray Scholarship, the recipient must have never attended a NAMA Annual Foray event before; however, if someone who HAS attended before ends up winning, they will have the option to pass on the scholarship slot to someone they choose who has not! Or they can just decline the award in favor of the next finalist who has not attended. FUN—and spreading mycofellowship—are the point of this contest.

Have questions? We are happy to help you resolve them; please contact us at CulinaryArts@namyco.org.

NAMA

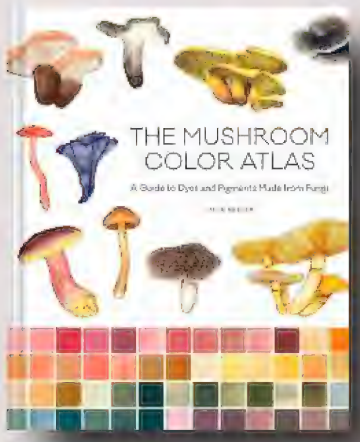
Reads

Explore Captivating Literature Dedicated to Mushrooms and Mycology.

The Mushroom Color Atlas: A Guide to Dyes and Pigments Made from Fungi by Julie Beeler

BOOK REVIEW BY ROSE TURSI, OUTGOING VISUAL ARTS COMMITTEE CHAIR

Reprinted through generous permission from FUNGI Magazine, Vol. 17, No. 4



Chronicle Books, 2024
ISBN: 1797228455; ISBN 13: 9781797228457
288 pages
$35.00

The Mushroom Color Atlas: A Guide to Dyes and Pigments Made from Fungi (the *Atlas*) is a book I've been eagerly anticipating for quite some time and now that I've got my hands on a copy, I'm happy to report that it's as amazing as I'd hoped.

The author, Julie Beeler, first came onto my radar when she won top prize in the fiber arts category of the 2021 NAMA Visual Arts Contest. It was over a year later when I met her in person at the 19th International Fungi & Fiber Symposium, held in Port Townsend, Washington in October of 2022. She was one of the instructors and her class on creating lake pigments from mushrooms for paint and ink was actually a big selling point on my attending the conference. While dyeing protein fibers from mushrooms has been an established art form for a while now thanks to the pioneering research of artist Miriam C. Rice in the 70s and 80s, creating paints and inks from mushrooms is considerably less practiced. Also, while the process of creating lake pigments from organic matter has existed for thousands of years, its use has primarily involved plants and insects. The class was fun and educational, and everything I learned is covered in this book—along with so much more.

After a long career in interactive design, Julie Beeler founded Bloom & Dye, a natural dye studio and farm in the Pacific Northwest. Her interest in the natural colors of plants soon expanded into the array of colors found in the fungal kingdom, and not long after, she launched the website mushroomcoloratlas.com. This book is a continuation and expansion upon her research and serves as an excellent resource and reference guide for the wide range of colors that can be derived from mushrooms. Beeler's book is well organized and easy to understand. Whether your interest lies in how mushrooms can be used as a dye or as a pigment for paint, she guides you through the preparation and process. The book is also absolutely stunning and a joy to leaf through. Each page is more beautiful than the last, with oddly satisfying rows of color swatches and scientifically accurate illustrations of mushrooms. Even if you never try mushrooms for color, this can serve as a beautiful coffee table book.

It's more than just beautiful though: the *Atlas* is a resource and reference first and foremost. One of the things I like best about it is the way the information is organized. The first section of the book is arranged by color. Let's say you're interested in red, you can skip to that section and see all the mushrooms that are capable of giving red color, and what mordant or metallic salt and process is

needed to achieve that color. However, the second part of the book is the same information arranged by mushroom species, further organized by chapters like Boletes, Polypores, Toothed, etc. So if you've found a large flush of a particular mushroom, say *Phaeolus schweinitzii*, you can flip to the section on that particular mushroom where you are greeted by charming, scientifically accurate illustrations of that species along with a general overview of its features, ecology, distribution, etc. This is followed by a segment on dye preparation with swatches of color, using various mordants on fibers and other key information such as ratio, pH, temp, etc. This is followed by a segment on pigment preparation and swatches showing various colors achieved with additives such as alum, citric acid, soda ash, etc.

The third part of the book is dedicated to the process. It details everything you need to make dye, how to prepare the fibers (including cellulose fibers.), making the dye bath, etc. Then it moves on to pigments, going over all the equipment needed, the process of making a lake, and further transforming that into paint including recipes for watercolor and ink. The photographs in this section are exquisite, staged in a way that perfectly captures the balance between artful and practical. The final part of the book offers up additional resources including internet offerings, a glossary and index.

One thing I notice is the book heavily features color-giving mushrooms of the Pacific Northwest, which makes sense as the author lives in Washington State, so those are the species to which she would have easiest access. She does make a point to include some dyer's favorites from other regions such as *Hapalopilus nidulans*, which grows in the eastern U.S., and *Omphalotus olivascens*, which is found almost exclusively in California, to name a couple.

In conclusion, I have to say that *The Mushroom Color Atlas: A Guide to Dyes and Pigments Made from Fungi* is a book that every mycophile as well as any artist interested in natural dyes and pigments should have in their library. It's hardcover, totaling 288 pages with color illustrations and photographs throughout.available from Chronicle Books for $35.

NAMA Crossword

BRUCH REED, COO/*MQ* ED., WITH LAYOUT ARTIST CHRIS ROSS

As always, the answer to every clue can be found through a careful reading of your latest *MQ*!

Clues on the next page

January February March 2025 NAMA Crossword

BRUCH REED, COO/*MQ* ED., WITH LAYOUT ARTIST CHRIS ROSS

Across

1 Delicious mushroom or MMS' highest honor
5 count of clubs so far receiving travel funds
6 mushroom eaters
10 NAMA's only Federation
12 2021 logo designers' 1st monikers
13 *Mushroom Color Atlas* creator
14 Hunters are The
17 spicy dish and generous benefactor
18 Lincoff was a proud
20 false porcini unmasked as
21 another Roman emperor
24 screen-printing-optimized art
27 Pevec will never do this with CO's mushroom
30 a francophone Clara Peller might ask where's
32 Official Vermont fungal genus
34 an unique MycoBlitz
35 *Friends* brother or scholarship recipient
37 list we all have before we kick it
38 FDA calls it "fungus"
39 genus Rye hunts
40 Claudette Lamprecht honor
41 where matsutake, not worm, is spice
42 museum-bound specimen

Down

2 California *Omphalotus*
3 Official 2025 name
4 no borealis named for him
5 Coastal Shores & Spores Chair
7 was epithet of all
8 where NAMA has a group and a page
9 "curved gills" genus
10 *Hydnellum suaveolens* smells like
11 ...Dyes and
15 NAMA_MX25 destination
16 *Stropharia ambigua*, aka
19 Pioneering 70s and 80s dyer
22 discouraged by the MycoBlitz
23 Australian ingredient
25 not a problem for *Amanita muscaria*
26 Nightingale or Regional Foray locus
28 "...a throne of white"
29 MMS scholarship honors
31 of the woods, say
33 MX mycolgist surname, rhymes with contraire
36 citrus drink vendor or CO state fungus hopeful

Answer Key to October November December 2024 NAMA Crossword

BRUCH REED, COO/*MQ* ED., WITH LAYOUT ARTIST CHRIS ROSS

Across:

1 headache-fighting group – **Clusterbusters**
8 Arora-says-edible epithet – ***muscaria***
9 WCMA's birthday party – **Galerina Gala**
13 Fear Of Missing Out – **FOMO**
14 Siegel's and Schwarz' standout section – ***Cortinarius***
19 president's pick – **toadstool**
22 variously defined fungal wonderland – **Cascadia**
24 what mushroom-ID apps aren't – **enough**
26 Art Goodtimes' nickname – **Shroompa**
27 Siegel's and Schwarz' vaunted coast – **Redwood**
28 It's a bag! It's a basket! – **bagsket**
30 scented seasonings – **aromatics**
31 candy cap genus – ***Lactarius***
33 Beug's ID oeuvre – **keys**
36 enviable Foray Registrar – **Green**
37 daily need of fermenting jars – **burp**
39 surname of apostolic U.S. headacher – **Cleminshaw**
41 fun-to-say hot chocolate ingredient – **Pioppino**
42 Ian Gibson app – ***Mycomatch***
42 Pacific Northwest NAMA Camp mushroom provider – **Mikuni**
44 pika genus – ***Ochotona***
45 WCMA's home incline – **Western Slope**
46 Bone book and *MQ* section – ***Mycophilia***

Down:

2 distinctive western hat and human – **Stetson**
3 *Sad Papi* himself – **Brandon Skier**
4 Beug's former student – **Stamets**
5 deadly PNW *Cortinarius* epithet – ***rubellus***
6 fermenting liquid – **brine**
7 famed founder surname or club president moniker – **Hamilton**
10 Siegel laudably lacks – **arrogance**
11 trigeminal autonomic cephalgias, for short – **TACs**
12 2025 Annual Foray state – **Vermont**
15 Crested Butte Botanic Gardens Dr. – **Amy Honan**
16 "intention and..." – **integration**
17 alcohol-free extract made using – **molasses**
18 *francais* for divided portion – **aliquot**
20 cracked-cap bolete epithet – ***diffractus***
21 dyeing *Cortinarius* – ***Dermocybe***
23 rendered chicken fat – **schmaltz**
25 psilocybin position NAMA does not take – **advocacy**
28 spoiler alert: he goes mushrooming – **Mason**
29 Layton's Pacific Northwest NAMA Camp first taste – **matsutake**
32 country "Mushroom," per Laman – **Rural**
34 Puerto Rican holiday beverage – **coquito**
35 "generalized fear of *Cortinarius*" – **cortinoia**
40 2023 designing woman – **Milnes**
41 Vietnamese broth soup – **pho**